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SYPHILIS IN CHILDREN.[1]

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SYPHILIS in children may be either acquired or congenital.

THE ACQUIRED FORM.

The acquired form is found to be rare. In a period of over four years at the Royal Alexandra Hospital Clinic only one case was seen. This occurred in a boy of eleven or twelve years of age, who had a definite chancre at the anal region and a secondary rash over the body.

However, there are a certain number of cases which must be assumed to be acquired, such as the cases occurring in one child in a family, the remaining members of which are found on clinical and serological examination to be non-syphilitic. These acquired cases are, however, few in number, run courses similar to the congenital, except for the chancre, when it can be found, but appear to be somewhat more resistant to treatment. The chancre is, of course, practically always extragenital and may be readily missed.

THE CONGENITAL FORM.

It will be convenient to classify the congenital cases into: (i) early, that is, those occurring in the first two years of life; (ii) late, those occurring after that age.

The number of new cases treated at the clinic varied from fifty to seventy in a year, and of the first 100 patients treated, thirty-eight were children under two years of age.

[1] Read at a meeting of the Section of Pædiatrics of the New South Wales Branch of the British Medical Association on July 15, 1932.

The Early Cases.

The early cases are, from the point of view of diagnosis, prognosis and treatment by far the most important.

In the first place it is very rare to see a baby born with active signs of the disease. In only one case did it occur, and that was a baby seen some days after birth, with a bullous rash on the hands and feet, in which the mother insisted that the rash was present when the baby was born. Eruptive signs are commonly seen, however, in the still-born syphilitic infant.

The earliest condition to be seen is a bullous rash. This usually appears in the first week after birth. It has the usual distribution of congenital syphilitic rashes, is followed by peeling very often of quite large areas of skin, and is of bad prognostic import. It is fortunately rare in occurrence.

Usually the babies are born healthy, some being remarkably healthy looking, and nothing definite appears until three or four weeks after birth. Snuffles and cutaneous lesions are the commonest mode of onset, but very frequently an increasing restlessness and irritability with causeless crying may be first noticed, and the baby does not thrive.

Snuffles was the commonest sign to appear first, and generally occurred from three to six weeks after birth, but it may be as late as three or four months.

Sometimes there is only slight obstruction, with snoring breathing, but in other cases discharge may be profuse. The discharge is usually muco-purulent, but may be bloody, with crusting around the anterior nares. Ulceration may follow the inflammatory condition of the mucous membrane and extend to the cartilages, interfering with the later growth of the nasal bones and leading to the saddle nose deformity. This, fortunately, seems to be rare nowadays.

A laryngitis is frequently present, giving rise to the hoarse, so-called aphonic cry which is very characteristic.

A rash appears in the great majority of cases, but may be transient. It generally appears from the third to the sixth week of life, but may be as late as the third or fourth month. It is symmetrical, polymorphous and generally of a reddish or brownish colour, leaving a scaling or brown discoloration on fading. It may be macular, papular, or even rarely vesicular, and readily becomes pustular about the mouth and ano-genital regions. It frequently occurs in patches of a circular shape, which may run together and invade large areas, especially in the region of the buttocks, but at the periphery the small circular and isolated patches will be discerned.

The distribution of the rash is very characteristic, affecting as it does the chin and the circumoral region, the palms and soles and the ano-genital region. The rash may appear on the arms and legs and body, but is generally not very marked on the body.

Around the mouth, where it is very often pustular, it may give rise to linear ulcers, causing hacking and fissuring of the lips and a similar condition at the angles of the mouth, showing linear scars on healing. This hacking of the lips is very characteristic, the seat of election being the mid-line in the lower lip and on either side, just below the nostrils in the upper, that is, at the site of the natural fissures or clefts.

In one or two cases abscesses in and under the skin, particularly of the head and neck, occurred; in these circumstances the baby usually dies.

Mucous patches on the lips and in the mouth and condylomata around the anus are common.

The general appearance of the child usually has become distinctive by this time. As the nose becomes obstructed suckling is difficult and loss of weight generally ensues, although the remarkably good state of nutrition of some babies is a source of wonder. The baby generally becomes anæmic. Very often it is of an earthy colour, senile looking and wizened. The hair is nearly always sparse and the scalp veins are dilated and prominent. A pot belly generally completes a characteristic picture.

Fever is present quite often in the eruptive stage, but disappears rapidly when treatment is instituted.

The spleen is practically always enlarged and palpable and is sometimes markedly so.

The liver is seldom greatly enlarged, although one child was seen, a little over one year old, in whom the liver extended below the level of the umbilicus, and there was a dilated condition of the superficial abdominal veins. Jaundice occurs occasionally, but is not frequent.

Lesions of the bones and joints are fairly common and may appear early, that is, in the first few months. One case of periostitis of the tibia occurred at three months. Bone and joint lesions are the commonest lesions to appear at a later date, that is, towards the end of the first year or sometimes even early in the second year, after the first flush of the infection has passed.

Epiphysitis is the commonest condition and is found often at the wrists. There is generally a swelling and tenderness to the touch, giving rise to the so-called Parrot's pseudopalsy, which is a fairly frequent occurrence. X ray examination shows that periostitis, osteitis and osteomyelitis of the long bones may be associated, and the child will not move the limb and cries on being handled.

It is possible that lesions of the bones would be found to be very frequent if X ray examination were made in every case.

Lesions of the cranial bones are fairly common, an osteoperiostitis of the frontal bones giving rise to the frontal bosses, and when associated with a similar condition of the parietal bones, to the natiform or hot cross bun head. Only one marked example of this was seen.

Craniotabes, the thinning of the margins of the parietal and occipital bones along the sutures, with indentation on pressure, occurs very rarely and is suggestive, but not diagnostic.

A dactylitis affecting the proximal phalanges, particularly of the index and middle fingers, was

seen on two occasions. The flask-shaped appearance of the fingers is very typical, and X ray examination shows an osteoperiostitis of the phalanges and sometimes of the metacarpals.

In the nervous system meningitis and hydrocephalus sometimes occur, but are rare.

In the pulmonary system the baby appears to be very susceptible to bronchitis and pneumonia in the first few months of life, particularly in the eruptive stage.

Enlargement of lymphatic glands is common, especially of the cervical and inguinal glands; this is to be expected, in view of the cutaneous manifestations. Enlargement of the epitrochlear glands, stressed by some, was not found to be common.

If a child survive, symptoms have usually disappeared by the end of the first year, then a period of latency occurs in which the child is perhaps backward, either physically, mentally, or both, ails readily, and does not thrive. On the other hand, a great number are of remarkable physical and mental development, and only some chance occurrence, such as interstitial keratitis or periostitis of the tibia draws attention to the condition.

The Late Cases.

Affections of the eyes are the commonest. Interstitial keratitis, with its three cardinal symptoms, photophobia, ground glass cornea, and salmon patches, is the commonest condition seen in late congenital syphilis. The earliest to show up was at three years and three months, but it usually appears later, that is, from six to twelve years of age, and, of course, may appear as late as twenty-five to thirty years of age. A history of injury, such as a hit with a cricket ball, sometimes appears to determine an attack.

It usually begins in one eye and affects the other eye later, although if treatment is instituted as early as possible and pushed, the second eye may be saved. Very rarely is the condition so severe in the second eye. Complete involution is rare, some opacity persisting very often, and any impairment of vision is dependent on whether the opacity is central or not. Several cases were seen in which it was impossible at a later date to tell which eye had been affected.

Iritis usually accompanies the interstitial keratitis, but may occur alone. Chorioiditis occurs, but is luckily very rare. Dacrocystitis was seen several times.

In regard to affections of the ear, deafness due to involvement of the eighth nerve appears to be very rare, which is fortunate, as it does not respond to treatment.

In regard to affections of the skin, ulceration due to the breaking down of a gummatous infiltration is similar to the condition seen in acquired syphilis in adults, but is not very common. There may be a single punched out ulcer with sharp edges and a sloughing wash leather base, but in some cases a serpiginous outline is produced from the confluence of several lesions, healing going on in one place while the ulceration is extending elsewhere, the condition on healing leaving tissue paper scars. The condition may extend over a period of years if not treated.

Alopecia areata occurred in one case, but as this is rather a common condition in children, a syphilitic origin was not convincing.

Ulceration with perforation of the soft or hard palate occurs quite frequently. Leucoplakia was seen once in a child three and a half years old.

There is a tendency for teeth to decay readily, both first and second teeth. It is only, of course, the second dentition which shows distinctive changes. Two groups of teeth which are undergoing development in the jaw during late uterine and early infant life bear the brunt of the trouble. The upper central incisors become the so-called Hutchinson teeth, with which everyone is familiar, and are very characteristic. The lower first molars present on eruption defective dwarfed cusps, well within the margin, and a shoulder of enamel bulging out around the crown, the so-called mulberry molar or Fournier tooth. This is just as characteristic as the Hutchinson incisor, and was seen almost as frequently. It is, however, very apt to decay, when, of course, the typical appearance is lost. The tubercle of Carabelli, an accessory cusp on the lingual side of the upper first molar, is seen frequently, but has no significance, as it is also frequently seen apart from syphilis.

Affections of the bones and joints are amongst the commonest lesions seen in late syphilis. Certain lesions, such as frontal bosses, are the result of osteitis and periostitis in the early months of life, and heavy knees and large wrists and elbows due to epiphyseal changes; but active lesions may occur, of which the commonest is osteoperiostitis of the tibia and fibula, giving rise to the sabre shin. Exposure to injury probably accounts for the frequency of the affection in the tibia. A gummatous osteitis is seen also, but is luckily not so common. A gumma of the hard palate causes perforation, and of the nasal septum and nasal bones causes deformity and a saddle nose.

Of the joints, a synovitis of the knee joints occurs frequently (Clutton's joints). It is bilateral as a rule and usually only slightly painful. It is rather remarkable how little the child may be inconvenienced by its tensely swollen knee joints. Arthritis is rare, but one child was seen who had a lesion of the knee joint with subsequent ankylosis.

Marked affection of the nervous system fortunately appears to be rare. It is rather difficult to assess the mental development of the children attending for treatment. Taking them as a whole, they appear just as normal as any other group of patients of similar ages. Backwardness occurs in some, however, mental and physical retardment being coincident, or sometimes the mental condition is associated with good physical development.

Two definite cases of general paralysis of the insane were seen; and one of the patients has since died. Other cases of mental degeneration

with fits may be looked upon as border-line cases of general paralysis of the insane. No case of *tabes dorsalis* was seen.

Amongst other nervous conditions one case of hemiplegia occurred.

In regard to the general appearance, in late cases there is generally some stigma which can be found on careful examination, but at times fine mental and physical development is seen. There is a definite look about many which cannot be mistaken. The wide forehead, with frontal bosses, sunken nose, a somewhat vacant look, very often an opacity of the cornea, linear scars on the lips and at the angles of the mouth, and notched incisors make a characteristic picture.

Diagnosis.

In a marked early case the diagnosis is usually easy; the miserable, wizened baby with pot belly, snuffles and rash shows a picture hard to mistake. There are one or two points in the diagnosis which may be stressed. A bloody snuffles, hacking of the lips, an enlarged spleen in a baby under four months, and bony and epiphyseal lesions with pseudopalsy are all very characteristic signs. A syphilitic rash rarely appears in a congenital case after the fourth month. It is the distribution, however, rather than the nature of the rash, which is the important point; that is to say, a rash in a baby which affects the chin and circumoral region, the palms and soles and the ano-genital region at the same time, is extremely likely to be syphilitic.

In a late case, signs of interstitial keratitis, Hutchinson teeth, mulberry molars, deafness, linear scarring around the mouth, depressed nose and sabre tibia are all very characteristic, and the general appearance is usually noticeable.

The Wassermann test is most reliable, especially in the early cases.

No baby was seen which was clinically syphilitic in which the reaction failed to occur. In one case a baby was tested in the first few weeks, because of another child in the family being under treatment, and was found to give no reaction, but later, at three months of age, the child developed a rash and gave a positive reaction. Thus, in a doubtful case, when the Wassermann test has been made early, it is advisable to repeat it at three or four months. In the later stages, as in syphilis in adults, it is not so reliable, several cases of definite syphilis being seen, for example, cases of interstitial keratitis, which failed to give a reaction to the Wassermann test.

Prognosis.

With suitable treatment the prognosis is excellent. Speaking generally, the earlier symptoms appear, the graver the prognosis, so that the bullous rash which appears earliest, is of very grave import, and the child usually dies.

The mortality is, of course, greatest in the early cases. Of the first one hundred patients treated, nine died, five of these being in the first year and two in the second, the two other cases being eight and eleven years old respectively. Forty-five patients were apparently cured, twenty-eight were transferred elsewhere or failed to continue treatment, and eighteen are still under treatment.

Pneumonia accounted for five of the deaths, and the babies appear to be particularly susceptible to bronchitis and pneumonia in the early florid stage. Marked involvement of the liver, with jaundice, accounted for three deaths, and general paralysis of the insane for the other death.

The ages of the apparently cured patients ranged from a few weeks up to ten years, that is, the ages when they first attended for treatment, but the great majority were early cases. Apart from the seven patients who died, every patient coming for treatment in the first two years of life and who was adequately treated, was apparently cured.

As the age of beginning treatment increased, it became more difficult to effect a cure, and when the child reached the age of puberty it was difficult to make the serum fail to react to the Wassermann test. If adult age is reached before congenital syphilis is recognized and treated, the blood practically always gives a reaction in spite of intensive treatment. The signs and symptoms clear up well, however, even although the blood reaction remains positive.

If the case sare adequately treated early, no stigmata as a rule can be discovered at a later date, and the Wassermann reaction still fails to occur. Of course, it must be recognized that the condition of the patients should be watched through life before they can be said to be cured, but it seems most unlikely that a child which has been observed to be free from syphilis, both clinically and serologically, over a number of years, should come to any harm in later life.

The older cases present a difficult problem. It is difficult to know just how much treatment to give and what the outlook is as regards the recurrences. However, even when the serum remains positive, great good can be done by adequate treatment, and it is rare to see any harmful occurrences at a later date.

The prognosis with regard to nervous affections does not appear to be good with ordinary treatment.

Treatment.

The mother should be treated in every case, if possible, before the child is born. Treatment can be carried out until a few weeks before birth, and if it is given carefully no harm is done to the mother, and great good to the child. The doses should be lessened somewhat and the urine watched very closely. Treatment should be carried out right throughout pregnancy, if possible, but even if pregnancy is well advanced before treatment is commenced, quite a lot of good can be done.

Three babies among the first hundred patients treated were born while the mothers were undergoing treatment. Two were born healthy and failed to give a Wassermann reaction and remained

in the same condition. In one case in which treatment of the mother was commenced late in pregnancy, the child gave a positive reaction at birth, but showed no symptoms or signs of disease, and the reaction rapidly failed to occur on treatment being instituted.

Vigorous treatment should be instituted immediately the diagnosis is made, first, because the babies are most likely to die in the early months, and, secondly, because they then respond more readily to treatment. It is really remarkable how they do respond to treatment, and it is a most pleasing thing to convert a miserable, snuffling child, with marked rash, into a fine, healthy baby, sometimes after even one or two injections. A combined course of arsenic and bismuth has been found to be most effective, and is given by means of injections once a week. It is remarkable what large doses of both arsenic and bismuth can be tolerated. In urgent cases in babies the arsenical preparation is given intravenously into a scalp vein or the external jugular vein, and in the older children into a vein in the arm.

In other cases in which it is difficult to give drugs intravenously or in which an effect is not required so quickly, the arsenic may be given intramuscularly in the gluteal region. The bismuth is injected intramuscularly.

A course of treatment was given as a routine, consisting of six doses of "Neokharsivan" followed by eight doses of bismuth. A small dose of each drug was given for the first dose, for example, a course for a baby of a few weeks would be: First dose, 0·075 gramme of "Neokharsivan" given intravenously, or of "Kharsulphan" given intramuscularly, followed by five doses of 0·15 gramme; then 0·5 cubic centimetre of "Bismol" followed by seven doses of one cubic centimetre.

An oily preparation of bismuth was considered most suitable, as the injections were gven only once a week, "Bismol" being the preparation mostly used.

The doses were increased with the age of patients up to 0·45 gramme of "Neokharsivan" or "Kharsulphan" and as much as four cubic centimetres of "Bismol" for a dose.

Very few ill effects were seen. No case of jaundice or dermatitis occurred from the arsenical preparation; in some cases vomiting and diarrhœa occurred, but was rarely marked.

The injection of "Kharsulphan" intramuscularly appears not to be very painful and gives rise to no ill effects locally at a later date. After the injection of "Bismol" stomatitis was seen occasionally and a blue line round the gums was quite common, but had very little significance. It is interesting to note that larger doses of "Bismol" can be given to the older children than to their mothers without any ill effects. Albuminuria was present occasionally when the larger doses were given, but subsided with rest.

It is of advantage to test the urine frequently when using large doses of "Bismol".

If the technique is correct or if the injection is made deeply into the muscle, there is very little pain or discomfort after the injection of "Bismol". In a period of about four years only two cases of abscess formation occurred. Occasionally, however, a certain amount of swelling and induration remains for a short time after the injection.

An interval of one month was allowed after a course of treatment, during which time, in the older patients, potassium iodide was given.

At the end of the rest period a Wassermann test is done and two full courses of treatment are given after the Wassermann reaction first fails to occur, and if the serum continues to give no reaction, no further injections are given. For the ensuing year mercury is given by the mouth for two-monthly periods, in the form of *hydrargyrum cum creta*, 0·01 gramme (one-sixth of a grain) to 0·32 gramme (half a grain) three times a day, followed by intervals of two months in which no treatment is given. The child is kept under observation for another year, during which no treatment is given at all. Wassermann tests are done every six months during this time, and if at the end of this period all the Wassermann tests have yielded no reaction, the child is considered to be cured.

In babies the Wassermann reaction in practically every case fails to occur after the first course of treatment, and in some cases the serum fails to give a reaction after even one or two injections. The rash clears rapidly as a rule after one or two injections. Snuffles take longer and may take several weeks to disappear. Epiphysitis and other lesions of the bones and joints also may take several weeks to clear.

In the late cases it is somewhat distressing to find that an interstitial keratitis may appear while the child is under treatment. In this case the treatment should be immediately intensified, and it was the practice in all cases of interstitial keratitis to give both arsenical and bismuth preparations on the same day, to give as large doses as the child could tolerate of both drugs, and to continue treatment until all inflammatory reaction had subsided. Occasionally as much as 0·45 gramme of "Neokharsivan" and four cubic centimetres of "Bismol" were given at one time. In this way it was possible in many cases to save the second eye altogether, or at any rate to lessen the force of the inflammatory reaction very considerably. Six to eight weeks was about the ordinary time taken for the usual attack to subside.

Gummata, both of the skin and elsewhere, usually heal readily. The bilateral swelling of the knee joints usually takes several weeks to subside, as also does osteoperiostitis of the tibia. When the liver is markedly affected it is advisable to give bismuth only at first and go on to "Neokharsivan" later.

Conclusion.

In conclusion I should like to make a plea for the early recognition and adequate treatment of congenital syphilis. Prevention of the disease, of

course, should be aimed at, by treatment of both parents, and the mother should be treated while pregnant, but, failing that, almost everything depends on the early diagnosis and adequate treatment of congenital syphilis, in order that the unfortunate children may become useful members of the community.

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GASTRO-ENTERITIS.[1]

By Lindsay Male, M.B., B.S. (Melbourne),
Perth.

In presenting these remarks on gastro-enteritis in its widest sense, I am fully aware of once more passing over ground familiar to all of us. I am also aware that the subject has been frequently dealt with by more able tongues than mine, but my only excuse for dealing briefly with the subject is that it is advisable occasionally to take stock of our knowledge and attempt to approach the matter from a new angle.

In my remarks I have limited myself to personal experience, except in those sections where wider research has been carried out. None of us can deny that infantile summer diarrhœa has caused, and will continue to cause, us all much mental unrest.

The majority of cases will settle down, the patients' condition will improve, and they will be cured by our accepted and proven methods. The odd case will not respond, the patient will steadily slip down-hill more or less rapidly, or will relapse despite our best endeavours. It is the odd case with which I am concerned, as that is the one which adds the extra white hair to one's diminishing tonsure, or stimulates the degenerative fibroblast to hasten one's impending age and approaching decrepitude.

At the onset may I suggest that in dealing with these cases, one should lose sight of "routine methods", or whilst using them, well tried as they may be, approach each case in an individual manner. Let us fit the treatment to the child, not, as is too often done, the child to our medical treatment.

I think that, at all events in this country, we regard "summer diarrhœa" as a definite infection, and I prefer to adopt this attitude to avoid confusion with those intestinal upsets, caused by other factors, diet, dyspepsia, symptomatic *et cetera*. Gastro-enteritis, although one prefers to omit the word gastro, ileocolitis, dysentery, are the terms usually adopted. "Blood-stained enteritis" I do not like, as cases so named really belong to the dysenteric group.

These subgroups are usually, although not always, associated with the onset of summer weather, but are more apt to occur when the deep ground temperature is high or constant. Hence, in the late summer one encounters the worst cases. Cases naturally occur during the remainder of the year, but these usually occur as terminal events in the poorly nourished, neglected or athreptic child; frequently, however, "enteritis" occurring sporadically is not enteritis, but a dyspepsia of some type. The true member of the enteritis group is ushered in by sudden onset, some degree of fever, collapse of greater or less degree, vomiting, not always marked, and perhaps occurring only once or twice, and the characteristic motion, rapidly assuming a particular stenching and unmistakable odour. The "stink" of an enteritis motion is, to my mind, most important, and beware of labelling a diarrhœa "enteritis" in its absence.

Bacteriology.

It is interesting from the point of treatment to regard the bacteriological findings in enteritis, mainly on account of the lack of finality; we are omitting for the time the dysentery group. In the main, I think it is generally agreed that the disease is due to an infective agent, and that the infective agent is introduced from without and is not merely the assumption of a virulent pathogenicity on the part of some normal bacterial inhabitant of the intestinal tract. Further, I think that the infective agent is introduced into the alimentary system by medium of foodstuff, milk *et cetera*. This latter remark is, of course, open to criticism, as many authorities hold that the infection gains entry through upper respiratory system, sinuses, ears *et cetera*. It is true that tonsillitis, *otitis media*, mastoiditis, sinusitis are frequently found in infants with enteritis, with increasing frequency, but to date there is no conclusive evidence that such infection is an accessory before the fact. *Post mortem* appearances strongly suggest that, in the fulminating case at all events, the cause of death is an intense toxæmia rather than an inflammatory condition of the intestine; certainly one can recall numerous cases in which a bacteriologically proven septicæmia was the cause of death (*Bacillus coli* group).

Morgan's bacillus No. 1 has certainly been recognized and isolated, but its position to date is not absolutely clear. Streptococci of various types, hæmolytic, *fæcalis* alkaline, and *Bacillus coli* are also regarded as being possible agents.

Turning to the dysentery group, the bacteriological evidence is more definite: the bacilli of Shiga, Flexner, Kruse and Sonne, which have been grouped according to their fermentative reactions: The amœbæ which have been isolated in some cases only I have been able to demonstrate on one occasion in Perth, and in this instance the father's stools contained the *Entamœba histolyitica*. Lamblia and trichomonas have been shown to be responsible for some cases of dysentery, but in Australia, I think with the exception of Queensland, these have not been responsible.

In Queensland, the lamblia group has been frequently and recently demonstrated in the stools of normal non-dysenteric children, particularly in some orphanages, in Townsville, I think. Speaking generally, and at the same time digressing a little, one may state that evidence has been presented which suggests that the normal lactic acid flora of the normal

[1] Read at a meeting of the Eastern Districts Association of the Western Australian Branch of the British Medical Association on November 6, 1932.

nursling may have some protective power, in that they create conditions unfavourable to the growth of pathogenic organisms; this implies conversely that pathological processes may arise through overgrowth of normal forms. It has been proved in laboratory animals reared under polar conditions that few bacteria inhabit their alimentary canals and their digestive functions do not suffer from their absence. Likewise, in the normal breast-fed infant the upper reaches of the intestine contain comparatively few organisms. It is a matter of indifference to the host what kind of organisms develop in the alimentary canal, but the replacement of normal forms by exogenous organisms, such as those of enteric fever, paratyphoid fever, dysentery, cholera *et cetera*, may result in severe illness. In addition to these organisms possessing the power to incite specific disease, they exhibit in common the ability to form lactic acid, and laboratory evidence has been produced to show that their pathogenicity is associated with the utilization of protein by the bacteria for energy, whereas the lactic acid-forming property is definitely associated with utilization of carbohydrate for energy. To put it in another and simpler way—if these organisms are capable of producing harmful substances as the result of their utilization of protein or protein derivatives for energy, and if they can also form harmless lactic acid from carbohydrate, it suggests that some species of "reformation" is possible; and this transformation of a toxicogenic organism to a lactic acid bacillus in the interest of the host has received practical support in the treatment of some cases of bacillary dysentery. It has been found that for this purpose lactose is the most suitable sugar, and, further, that associated organisms, such as streptococci, under this *régime* derive their energy from the lactose, that *Bacillus coli* and other associated alimentary inhabitants shift their metabolism to the lactic acid side, and that finally *Bacillus bifidus* and *acidophilus* in children reappear in the stools if the carbohydrate feeding is persisted with. As the diet is prolonged the stools approximate more to the normal nursling type in colour and reaction, and dysentery bacilli become harder to find, and in many instances cannot be cultured. This, then, gives one the basis of dietetic treatment in infantile dysentery where a high carbohydrate diet is given. But as one finds in practice that high lactose feeding is not always tolerated, leading to sugar diarrhœa, it is found advisable to use mixed sugars, dextri-maltose, as in Horlick's or Mellin's Food.

If I have dwelt overlong upon this aspect, I crave your kindly tolerance, as to my mind therein lie the essentials of our treatment of epidemic diarrhœa and dysentery. The administration of suitable foodstuffs is the most important part of our treatment; drug therapy is of comparatively little moment in such cases.

Post Mortem Appearances.

Post mortem appearances are often slight when one considers the severity of the infection. The mucosa of stomach and intestine is slimy, and the intestinal walls are somewhat œdematous. There may be some petechial hæmorrhages in the mucosa. In cases which have been of longer duration, there is a general mesenteric adenitis, and I have seen on four occasions suppurative peritonitis resulting from the breaking down of (suppurating) mesenteric glands, two at autopsy and two in which operative treatment was carried out, and in which the infection naturally was later verified *post mortem*. In cases which have persisted three or four weeks, one sees almost universally a complete denudation of intestinal mucosa and a bowel wall of tissue-paper proportions, but I have never yet encountered a perforation.

In the lungs œdema is found at the bases, and frequently bronchopneumonic patches are seen. In the brain some œdema of meninges is found. The liver sometimes exhibits fatty changes.

In long standing cases, which have gone on to a gross degree of athrepsia, I have on several occasions demonstrated a miliary tuberculosis and seen a similar cause leading to death some months later.

Ætiology.

Predisposing Causes.

Of paramount importance is predisposing causes is the hygienic factor; impure or contaminated milk supply, unboiled milk, are probably the biggest obstacles to be overcome.

Cross Infection.

Cross infection from one child to another, or from parent to child, is frequently responsible. I have frequently seen a parent infected from a child, and *vice versa*. Infections are spread by napkins soiled with bowel discharges, and in hospitals patients are frequently infected through the laundry. In fact at our Children's Hospital during the first summer in which I was in charge, numerous cases of cross infection occurred, and they ceased when arrangements were made to disinfect all linen from the enteritis ward, and to boil and to do preliminary washing prior to such linen being sent to the hospital laundry. I do not think that the infectiousness of this disease is always fully realized, and I insist on even more stringent precautions being adopted than is the case with enteric fever. It is for this reason also that enteritis patients frequently do better in their homes, with strict nursing facilities, than in hospital; if not from the inception, at all events once the first acute phase and danger of acetonæmia is passed.

Among artificially fed infants enteritis exacts a greater toll than among breast fed infants of corresponding age, the reasons being: (i) That the artificial food is more liable to contamination. (ii) Artificially fed infants are more prone to digestive disorders, dyspepsia, sugar diarrhœa *et cetera*, and these are followed frequently by a true infective diarrhœa. (iii) The high "buffer action" of cow's milk as compared with breast milk, "buffer action" being briefly described as the ability to unite with relatively large amounts of acid or alkali without great change in chemical reactions.

Overheating, leading to fluid loss, is also a potent factor in predisposing to enteric infection, and in the same category is the almost universal tendency to overfeed with milk, by using it as a drink to satisfy

thirst in the hot weather. Pure boiled water is not given in sufficient quantity in the majority of instances, and there is in many quarters a disinclination to give cold water, or even cool.

Parenteral Infections.

Parenteral infections frequently lead to diarrhœa, for example, the symptomatic bowel disturbance which so often ushers in a tonsillitis, or an otitis, or pyelitis. If the provoking cause is not dealt with, such patients may become secondarily infected and a true enteritis result, or the infant may become debilitated and prove an easy prey to a bowel infection. Similarly, during the course of an enteritis, never fail to make a thorough and frequent examination of urine, ears, nose and throat, as herein often lies the explanation of an unexplained rise in temperature or a persistence of symptoms. One sees too often an enteritis following a favourable course after incision of tympanic membranes. Remember also that the membrane is not necessarily reddened, nor does the child complain of pain. The membrane may simply show diminution of normal landmarks, lack of gloss, or more particularly an appearance of thickening and loss of normal translucency.

Symptoms.

Symptoms are too well known to need repetition, although it may be well to refer to the absence of pain or tenesmus in enteritis, and to the early loss of the normal turgor of skin, subcutaneous tissue and muscle. This loss of tone manifests itself rapidly; even in mild cases it is readily apparent after twenty-four hours. In severe or fulminating cases it manifests itself almost immediately.

The apathy of these patients is also marked, and may deepen imperceptibly into coma. Frequently, however, external appearances are deceptive and, although the child may look ghastly and appear comatose, if it can be wakened to full consciousness by examination *et cetera*, one feels that all is not lost. In the more acute cases the picture is exaggerated, and there are high fever (a temperature of 40° to 40·5° C. or 104° to 105° F.), sunken eyes, depressed fontanelle, cold extremities, sometimes petechiæ. Air hunger, great thirst and acetonæmia develop. It is not always necessary to await the testing of urine to demonstrate this; the acetone can be smelt and the ruddy, slightly cyanosed lips and restlessness tell the story.

Do not be deluded into the belief that acetonæmia may be late in developing; its onset is frequently apparent within an hour. Beware of the diarrhœal child whose lips suggest the colour of spurious good health. Train your nose to pick up one odour—that of acetone. In passing, one would refer to a pitfall in this regard: the smell of brandy recently administered to an infant may suggest acetone. The vomiting may be severe and continuous or may occur only once or twice. The stools are frequent, first curdy, later green with shreds of mucus, later pale and watery, acid and causing scalding to the buttocks.

The most acute degree of enteritis is that in which death may occur within twelve to eighteen hours from onset, without diarrhœa. In fact, one has seen infants die of the intense toxæmia without passing a motion; there the picture is one of collapse and hyperpyrexia. Such cases frequently suggest meningeal involvement, and in my experience occur most frequently in children artificially fed, particularly with one of the dried milks, the type with an excess both of sugar and fat.

Diagnosis.

The diagnosis does not usually present much difficulty. From the food diarrhœas and dyspepsias it is distinguished by the rapidity of onset, fever, collapse, and lack of tone. The feeding history, comparative well-being of the dyspeptic, and the history of irregular weight gains, stationary weight or loss is helpful.

From meningitis it is distinguished by the depressed fontanelle particularly, and the acetonæmia.

From atrophy or athrepsia the condition is distinguished by the longer history, frequently weeks of feeding difficulty, the constipation and wasting. It must, however, be remembered that an acute infective diarrhœa may supervene on the above conditions.

The onset of the dysentery group may be gradual, extending over two days, or acute. The gradual type does not usually present blood immediately—the motions are frequent, green and offensive for a time before the typical bloody mucus stools appear. Later, sloughs, and even pus, may be passed.

The temperature is usually higher than in a mild or moderate enteritis, but tends to swing, and is usually maintained for a longer period. The dysenteric infant is more often older—one and a half years—and at the onset does not appear to be so desperately ill. Colic and tenesmus are a feature of the onset.

The diagnosis here is from intussusception and is usually not difficult, but remember that one does occasionally see intussusception occurring during outbreaks of enteritis and dysentery.

Prognosis.

The prognosis naturally depends on the severity of the infection and previous health. Be guarded in the infant who is overweight and podgy; he probably has been overfed with carbohydrate and his bulk is largely due to retained fluid. This type does not stand up to an enteritis at all well.

Petechiæ and œdema are of grave moment; I think one is justified in saying that it is extremely rare to see such a petechial or œdematous child recover.

Treatment.

The essentials of treatment, in order of importance, are: (i) fluids, (ii) food, (iii) drugs.

It is necessary, particularly in the moderate and severe cases, to set about at once to replenish the body fluids; the loss is enormous, and the shocked condition of the infant renders their replacement a life or death matter (two and a half ounces per pound per day is the minimum). Fluid as saline solution, saline solution and 5% glucose, water,

weak tea (in older children) must be administered by every possible route. The vomiting may prevent the giving of sufficient quantities by mouth, and the diarrhœa renders the rectal administration out of the question. The saline solution or saline solution and glucose must be administered subcutaneously, and even at the risk of sloughing.

Intravenous administration of saline solution, glucose and acacia solution, 7%, should be used if possible. This, again, is frequently difficult in infants, or when one is single handed. The longitudinal sinus may be used, but here again the same difficulty occurs, and it is not always possible or advisable to administer sufficient by this route. In my experience the intraperitoneal method is the safest and speediest, and the fluid administration can be repeated at eight or twelve hour intervals.

Care must, of course, be exercised in technique, and also not to administer more than five ounces at one time. Never give fluid by this route to the extent of distending the abdomen. Circulatory and pulmonary embarrassment is bound to follow. This method, I know, has suffered much adverse criticism, mainly because it has been left until too late to be of value. In many instances the infant is moribund before saline solution is administered.

May I be permitted to give a few figures? I have now personally performed seventy *post mortem* examinations on infants dead from enteritis in whom intraperitoneal injections of saline solution had been given. The bulk of these (fifty-seven) were of the type spoken of above—the ones who were practically moribund before its administration. In some instances (ten or twelve) the autopsy was performed within two hours of death. In all these cases the fluid had been absorbed, with the exception of about one and a half ounces in the latter group. In no instance was I able to demonstrate any bowel perforation.

With regard to the production of peritoneal shock, which has been offered as adverse criticism, I have seen it occur only once or twice. On the contrary, I find it is practically the rule that the infant is soothed by the administration of saline solution, and frequently falls to sleep during the process.

I have further administered saline solution by this route at twelve hour intervals over a period of three to four days on several occasions, and believe it has been life-saving.

I am convinced, then, that it is a safe proceeding and, provided one's technique is correct and the saline solution is not given as a last desperate resort, it is productive of benefit.

The rule I lay down is this: (i) rigid asepsis, (ii) very early administration, (iii) saline solution at a temperature of not lower than 37·8° C. (100° F.), (iv) slow administration, (v) not more than five ounces to be given at a time.

At all events, whatever your method of saline solution administration is, give it early and repeatedly. Regard it as an essential of treatment—do not expect it to revive and save moribund infants. I think that in the past saline solution injection has been too long delayed.

Vomiting.—In resistant cases sips of cold saline solution, drachm doses by mouth, repeated frequently, with the child reclining, frequently check vomiting. Occasionally a mustard leaf applied to the epigastrium is of service. Gastric lavage may be necessary.

Starvation.—The enteritis infant does not tolerate starvation for a long period. The more ill the infant is the shorter the food deprivation period should be. Sixteen hours on water is an absolute maximum, and then only in the very mild cases, and provided dehydration is not marked. I rarely employ starvation for longer than six hours. The long period of twenty-four to twenty-eight hours on water or barley water may aggravate the diarrhœa by producing hunger or starvation stools.

Aperients.—Avoid excessive catharsis, and use calomel with discretion. Usually the diarrhœa has emptied the bowel sufficiently. I prefer a small (one drachm) dose of castor oil. The routine administration of sulphates, I think, tends to mask the nature of the stools, and when they are given I think they should be discontinued after two or three doses of say eight to ten grains, and then not in the severe cases. In dysentery, sulphates of soda and magnesia may be given for a few doses until fæcal material appears in the napkin, and then discontinued.

After this very preliminary medication, I prefer to use a castor oil emulsion, of three or four minims made in acacia emulsion, with a minim or two of aromatic syrup or cardamon. The usual way of preparing such an emulsion in almond oil is not universally tolerated. This is given until motions become less frequent, say four or five in twenty-four hours, and are then diminished or discontinued.

Opium is sometimes necessary, particularly in dysentery if much colic or tenesmus is present, but in the main its use has to be very guarded. Dover's powder, as a sedative, may cause vomiting.

Bowel Lavage.—At the onset a single lavage and the retaining of some fluid is of benefit, but daily or twelve-hourly irrigation is not of value in my opinion. I think it frequently exhausts the patient. In the dysenteries in the presence of much blood, or pus or muco-pus, and provided it does not exhaust the patient, daily colonic lavage with a one in 40,000 solution of permanganate of potash, silver nitrate, half a grain to an ounce, infusion of quassia, are sometimes of benefit.

Bismuth subnitrate, aromatic chalk, "Tannigen" (protein tannate) have their place in the treatment of dysentery, as also has powdered willow charcoal.

Diet.

So much for drug treatment, which I frankly regard as a useful assistant, but not to take the lead. The administration of food of suitable quantity and type is the main item in treatment.

Bearing in mind, then, the remarks made earlier regarding bacteriology *et cetera*, I use in enteritis one of the acid milks, preferably lactic acid milk, with or without dextrose or maltose.

After a short period of water, saline solution, or in some cases whey, administration, I commence with skimmed lactic acid milk in a dilution of one part milk and two or three parts water. After

eight to twelve hours this is increased to equal parts, or one to one and a half water, and if at the end of sixteen to eighteen hours the stools are showing some yellow, it is further increased to milk three, water two, or milk two, water one, and provided stools remain as before this increase, the milk is increased to full strength after another twenty to twenty-four hours. I do not wait for stools to approximate further to normal after the first increase, but keep on increasing the milk. Even if the motions are still frequent, and despite the odour, I think the acid milk should be stepped up to full strength within two, or at most three, days. As the motions become more normal in appearance I gradually, very gradually, skim the milk less and less, until full milk unskimmed is taken. From then on after a few days other articles are added to diet, as broth, arrowroot made with plain boiled milk, crusts *et cetera*.

In dysentery I prefer a high carbohydrate, malted milk, or lactic acid and maltose, progressing in a similar manner, and in these cases I think it is of advantage to have some bulk in the diet, as vegetable broth, with finely sieved vegetable *puree*, or even baked apple or apple snow.

In the fulminating cases, provided the patients survive the terrific onslaught, and provided saline solution and saline solution and glucose administrations have been successful, I usually embark on evaporated milk, fat free, and then on lactic acid milk. There, however, the main responsibility is to tide over the first few hours.

Serum.

In some epidemics of dysentery polyvalent serum is definitely of value, but I think that on the whole its results have been disappointing. I prefer, where possible, to have stool cultures prior to administering serum, as in the past one has seen such acute reactions and sensitiveness result from its use that care is necessary not to use it indiscriminately.

Complications.

Before concluding this paper I think that one should mention complications, or at least the most likely ones.

Otitis and mastoiditis have been spoken of and need no further comment, except that the latter may progress quietly and frequently in a symptomless manner in a sick infant. Watchfulness is the password, and if in doubt a mastoid opening under local anæsthesia is indicated. An ear temperature of 37·2° to 37·8° C. (99° to 100° F.) continued above normal line is always suggestive.

Pyelitis due to the *Bacillus coli communis* is probably one of the commonest complications. It may occur during the subacute stage, or particularly in the pre-convalescent period. Ordinary ward testing of urine is not sufficient, it is preferable to spin the urine and examine it by the microscope. In its treatment I think it better to give large twenty to thirty grain doses of citrate of potash twice or thrice during the day, and at night, rather than smaller and more frequent doses.

Particularly in the dysenterics, and more often in older children, two and a half to five years of age, an intense toxic nephritis occurs, this more often in the fulminating cases. Gross œdema and convulsions follow one another rapidly, and I have seen death ensue within two days from this complication, even when the dysentery is settling down and one has regarded the patient as having a clear run ahead.

Glycosuria, in my experience, occurs occasionally in enteritis and may persist despite elimination of sugar from diet. I regard it as being due to a passing pancreatic disturbance due to inflammation, or toxic œdema. I have encountered several such cases, and they cleared in a week or so without dietary changes, and the patients have remained well with no glycosuria and hyperglycæmia when seen over a year later. I do not think it materially affects prognosis.

Bronchopneumonia is a frequent complication which may prove the deciding factor in success or failure, and it is most often a quiet insidious process.

Furunculosis and septic manifestations are always of grave omen, and even the most insignificant septic spot or abrasion should receive careful and systematic attention. A paint of gentian violet 1%, 1% brill green, 1% methyl violet in 30% rectified spirits of wine is, I think, an efficient means of combating spreading infection.

Suppurative parotitis has been, in my experience, only associated with fatal cases.

I feel that I owe you all an apology for having transgressed on your time to such an extent, but the subject is fairly wide and I have tried to give as practical a view as possible, particularly as regards treatment, which, after all, should be the summarizing of one's collected facts.

ENLARGEMENT OF LYMPHATIC GLANDS IN CHILDREN.[1]

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LYMPHATIC glands occur in all mammals and a few of simple structure are found in birds, but no vertebrates below birds have them. The greater part of the substance of the gland consists of lymphoid tissue, the cells of which resemble the small lymphocytes of the blood, and these cells are arranged in nodules in the cortex and cords in the medulla. Between the lymphoid cells there is a connective or reticular tissue framework, covering which one finds certain ramified cells, which are phagocytic, and are capable of taking up foreign matter such as soot particles; but it is doubtful whether these cells can actually destroy organisms. Lymphoid tissue is particularly abundant throughout the body in children, probably because the child is gradually acquiring immunity against all manner of disease. The tonsils and adenoid tissue in the pharynx are like surface lymph glands, and form a first line of defence against attacks by organisms in the inspired air and possibly also in the food. Solitary follicles and Peyer's patches in the intestine are of similar structure and function and help to deal with infection from this source. According to Abt[1] "if smear and

[1] Read at a meeting of the Section of Pædiatrics of the New South Wales Branch of the British Medical Association on September 16, 1932.

culture preparations are made at intervals along the alimentary canal, it is found that the number of bacteria and the amount of lymphoid tissue parallel each other", demonstrating that here, as elsewhere, the lymphoid tissue is the first line of defence against infection. The appendix, which is particularly rich in lymphoid tissue, has been called the tonsil of the caecal cesspool. It is noteworthy that the lymphoid tissue of the appendix, frequently becomes inflamed at the same time as the tonsils, in both rheumatic and scarlet fever. Where the superficial lymphoid tissue has failed to arrest infection, or where, as in the case of the skin, it is present in small amounts only, groups of lymphatic glands take on the work, and these are always placed in positions where they are not subject to much pressure, and therefore less liable to injury, and where they can undergo considerable enlargement without causing much inconvenience. Slight enlargement of lymphatic glands does not necessarily connote disease, hence we cannot say glands are diseased because they are palpable. Abt[2] asserts that where the tonsils have been enucleated and the adenoids removed, 35% of previously enlarged glands disappear; 55% become very nearly normal, and 10% persist. He contends that the 10% of persistent glands are infected by the tubercle bacillus. It seems to me that some of the persistently enlarged glands remain enlarged because of having taken on the work previously performed by the tonsils. Since one of their functions is to guard the body against disease, it is not surprising that they sometimes enlarge when they function.

The Palpable Superficial Lymph Glands at Different Ages.
(Adapted from "Abt's Pediatrics", Volume I, page 960.)

Group.	Gland Groups. Percentage.				
	Occipital.	Cervical.	Axillary.	Cubital.	Inguinal.
Children up to 12 years	5·4	100·0	92·7	96·3	100·0
Youths 13 to 20 years	5·3	81·9	69·1	77·4	91·4
Adults 21 years and over	0·68	74·7	68·9	81·7	92·0

Another function of lymph glands, which they share with lymphoid tissue elsewhere, is the formation of the lymphocytes of the blood, and they sometimes enlarge owing to some abnormality of this function. Just as enlarged glands do not necessarily mean disease, so enlarged tonsils are not necessarily diseased. The increased amount of lymphoid tissue in an enlarged tonsil may in fact be an extra safeguard against infection. The interesting observation has been made that the von Pirquet reaction is positive in about twice as many children with healthy looking tonsils, as in those with tonsils which are enlarged. It has been stated also that this reaction is much more often positive in children with healthy cervical glands than in children with enlarged glands. This suggests that the enlarged tonsils tend to protect the child against tuberculous infection, and the normal glands have allowed the infection to pass on into the more important tissues.

Enlargement of Lymph Glands in Infectious Diseases.

Enlargement of the superficial lymph glands is a characteristic feature of several infectious diseases. In measles a moderate enlargement of all the superficial lymphatic glands is not uncommon. In rubella or German measles enlargement of the cervical, occipital and mastoid glands may precede the rash in a few cases; and the posterior cervical glands are so frequently enlarged by the time the rash appears that it is an important diagnostic feature.

In scarlet fever the tonsils and cervical glands are nearly always enlarged during the early stages of the disease, probably owing to an attempt being made by them to destroy the infection. The reaction, however, of both these structures during this stage of the disease may be insignificant. During the latter part of the third week, however, both the tonsils and cervical glands may become enormously enlarged, possibly in a second attempt to overwhelm the invading organism. The result may be the acquisition of complete immunity, and the glands and tonsils then gradually subside. Sometimes in this disease the glands have to deal with septic organisms as well as the hæmolytic streptococcus, and suppuration may result. It is at this time also that acute nephritis may occur, due probably to the irritation of the kidneys by the toxins produced in glands and tonsils.

There is no need to mention all the regions where lymphatic glands occur, but by far the most important in children are the various groups about the head and neck, particularly the deep cervical and jugulo-digastric group. The afferent lymphatics of these come from the naso-pharynx and so convey infections from this source which constitutes such a large proportion of all infections of young children. About the head and neck we have other groups of glands such as the posterior auricular, occipital, anterior auricular, parotid, submaxillary, and submental, all dealing mostly with skin infections or infections about the mouth and lips. Their efferent lymphatics mostly go to the superficial cervical glands, which in their turn drain into the deep cervical.

Causes of Enlargement of Lymphatic Glands.

Some of the causes of enlargement of lymphatic glands are: (i) Sepsis, (ii) metastases from malignant growths, (iii) syphilis and tuberculosis, (iv) Hodgkin's disease, (v) lymphatic leuchæmia, (vi) lymphosarcoma, (vii) glandular fever, (viii) the exanthemata.

Septic Adenitis.

Septic adenitis is commoner in the submental and femoral groups of glands in children, owing to the frequency of *impetigo contagiosa* in the regions drained by these glands. One of the commonest causes of enlargement of the occipital and superficial cervical glands in children is *pediculosis capitis*.

Tuberculous Disease of Lymphatic Glands.

The cervical glands are much more frequently affected by tuberculosis than those of any other group; and owing to the fact that the upper deep cervical group, particularly the jugulo-digastric, receive the lymphatic drainage from the tonsils, they are more frequently affected than the other

cervical glands. Their affection is commoner during the second, third and fourth years of life, and is much more often bovine than human. Webster[3] found in a series of cases that 70·8% were bovine in origin. At first the enlarged glands are discrete and painless, but later become matted together by periglandular inflammation. Sometimes tuberculous infection follows acute infection, and in these cases the glands are at first acutely tender, and painful, symptoms which disappear after the subsidence of the acute infection, leaving some enlargement. When caseation occurs the enlarged glands become hard, and this hardening is an important diagnostic feature. Later as pus forms and penetrates the deep fascia, a subcutaneous abscess appears which, if untreated, causes a reddening and finally a penetration of the skin. The subcutaneous abscess, connected as it is with the deeper caseating gland by a narrow communication through the deep fascia, is sometimes called a "collar-stud abscess".

Out of a series of 330 cases of acute and subacute cervical adenitis in children, Gordon Bruce[4] found that 77·6% of the cases were due to chronic tuberculosis; and in very few of them did he find tuberculous disease elsewhere in the body.

Mitchell[5] found tuberculous disease in the tonsils in 35% of patients who had definite tuberculous disease in the cervical glands.

Webster[6] found tuberculous disease in the tonsils in 56·2% of such patients and in these cases he found that the tonsils sometimes appeared quite normal to the naked eye. One must remember, however, that the presence of tubercle bacilli in the crypts of a tonsil does not necessarily mean tuberculous infection of the tonsil; it may indicate that the tonsil is protecting the patient from infection.

The axillary glands are very rarely affected by tuberculosis, because of the rarity of tuberculous infection of any portion of the region drained by them. I have seen the inguinal glands on both sides enlarged to the size of a hen's egg due to tuberculous infection, in a patient who had caseating tuberculous glands in the neck. It appeared as if the infection in this particular patient came by way of the blood stream, as one could not find any trouble in the region drained by these glands.

The bronchial glands are quite frequently the site of tuberculosis, and here the infection is nearly always by the human type of bacillus. The infection may remain latent in these glands for years, only to become active again after an attack of a disease like measles or whooping cough. In such cases generalized tuberculosis often results. The mesenteric glands, when affected by tuberculosis, are difficult to palpate unless very large. The ileo-caecal group appear to be involved more often than the other mesenteric glands. The infection of the mesenteric glands is more often by the bovine than the human type of organism.

Treatment.—Whenever tuberculous cervical glands become hard, which is a sign of caseation, they should be excised before the inevitable abscess occurs. For heliotherapy or any other conservative method of treatment to be of any use, it must be employed before caseation of the gland has occurred.

Syphilis as a Cause of Enlarged Glands.

Enlargement of the lymphatic glands is commoner in acquired than in congenital syphilis. Where enlarged glands occur in congenital syphilis they occur in association with the rash about the mouth and buttocks, and are often due to secondary infection. Enlargement of the sentinel gland in the antecubital fossa is said to be characteristic of secondary syphilis.

Hodgkin's Disease.

It was in 1832 that Hodgkin first called attention to the disease which bears his name. He described the enlarged cervical glands in a child of ten years of age as having "the form of large smooth ovoid masses connected together by loose cellular membrane and minute vessels". He decided that the enlargement was not due to inflammatory changes, and recognized that splenic enlargement was frequently associated with the disease. We now recognize certain characteristic histological changes in the glands, but are still arguing as to the real nature and causation of the disease. Some authorities assert that it is a form of avian tuberculosis, and others are equally emphatic that it is more of the nature of a new growth. There is usually a more generalized involvement of the glands than is seen in tuberculosis, although the latter sometimes affects cervical, axillary, inguinal and other groups simultaneously, but in such cases one of the groups, particularly the cervical, is at a more advanced stage of the disease than the other groups. That is to say, one group will show caseation or suppuration, whilst the other groups show enlargement only. The glands in Hodgkin's disease do not suppurate, although areas of necrosis may occur in certain of them. In this disease also they remain more discrete, owing to the absence of periglandular inflammation, although there may be some matting together of the glands, but never to the same extent as in tuberculous adenitis, and the skin over them does not become reddened. Where one group only is involved in the early stages of the disease, the diagnosis may be very difficult and in these cases excision of a gland and its histological examination are necessary. The characteristic features seen in Hodgkin's disease are a proliferation of the reticular cells, the presence of atypical lymphocytes, and mononuclear and polynuclear eosinophile cells, together with certain multinucleated Hodgkin's or Dorothy Reed giant cells. We must remember, however, that Hodgkin's disease may occur in tuberculous subjects and that tubercle may become grafted on Hodgkin's disease.

Lymphatic Leuchæmia.

In lymphatic leuchæmia the cervical glands may be greatly enlarged and the other groups, such as the axillary and inguinal, usually only slightly. I have seen the cervical and mediastinal glands so enlarged in a child aged five years and suffering from lymphatic leuchæmia, that death from asphyxia was averted only by X ray irradiation. In leuchæmia, however, the glandular enlargement is usually overshadowed by other signs and symptoms, such as pallor, debility, and the hæmorrhagic diathesis; and a blood examination reveals the characteristic changes. Histologically the glands show a multiplication of the small lymphoid cells.

Lymphosarcoma.

Lymphosarcoma is not very uncommon in children. The mesenteric and retroperitoneal glands are more often involved than other groups. Advice is generally sought on account of loss of weight, loss of appetite, and anæmia. The blood only shows the changes of a secondary anæmia. A fixed tumour can be felt in the abdomen, usually near the middle line, and as the mass of glands enlarges, its presence just below the liver margin may lead to the diagnosis of enlarged liver. Jaundice may be present owing to pressure on the bile ducts.

There seems to be some connexion between Hodgkin's disease, lymphatic leuchæmia, and lymphosarcoma, as cases have been recorded of typical Hodgkin's disease having been transformed into lymphatic leuchæmia, and also cases starting as typical Hodgkin's disease have shown later on all the signs of lymphosarcoma. This transformation sometimes occurs after X ray irradiation, but in others the transformation has occurred without such treatment. The fact that such transformation does sometimes occur has been used as an argument in favour of these three diseases being all true neoplasms. X ray irradiation has a similar effect upon each of them, as it invariably causes a temporary reduction in size or even complete disappearance of the enlarged glands.

Glandular Fever.

In glandular fever there is marked glandular enlargement, mainly of the deep cervical glands, but sometimes of other groups such as the mediastinal, mesenteric, axillary and inguinal groups. There is generally pyrexia, lasting for four or five days, and the blood shows both a relative and absolute increase in the number of lymphocytes. Eighty *per centum* of the cases occur in children. It occurs mainly in epidemic form, although sporadic cases are not uncommon. Recovery without complications is the rule.

Metastases from Cancer.

Where metastases from cancer occur in the glands, they become enlarged, hard, contract adhesions to surrounding parts, and are usually painful. They are rare in children, hence not likely to cause trouble in diagnosis. In the neck certain tumours and cysts have to be differentiated from enlarged glands.

Conditions Resembling Glandular Enlargement.

Bronchial cysts are situated under portion of the upper third of the sternomastoid muscle. They usually first make their appearance in early adult life, and are not infrequently mistaken for an enlarged gland, or more often for a cold abscess. The turbid fluid content is not unlike pus, but a drop placed under the microscope reveals cholesterol crystals.

Thyreoglossal cysts and tumours are situated near the middle line where glands are rare, except in the submental region.

Tumours of the carotid body are rare. They are situated at the bifurcation of the common carotid, are usually painless, and can be moved freely laterally, but not vertically. The patient seeks relief usually on account of pressure symptoms. X ray irradiation will usually cause their disappearance.

Tumours of the submental and submaxillary salivary glands may be mistaken for enlarged lymphatic glands, and enlargement of the submaxillary gland due either to infection or the presence of a calculus in the duct is not uncommon.

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Reports of Cases.

HYPERSENSITIVENESS TO INSULIN.

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(From the Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne Hospital.)

THE extreme degree of hypersensitiveness present before desensitization, with subsequent toleration of insulin in therapeutic doses, and the theoretical considerations raised make the following case worthy of record.

Résumé of Clinical History.

The patient (Mrs. R.S.) was aged forty-eight years. She gave no history of any allergic manifestations herself, but stated that her father suffered from asthma. She stated that she was quite well till 1918, when she "collapsed" and became so weak that she sought medical advice. Apparently at that time it was discovered that she had glycosuria.

Early in 1924 she was given "Commonwealth" insulin by a private practitioner. No untoward reactions occurred till the fifth day, when the injection was followed by a violent local reaction, causing great swelling of the whole arm. This was reported to Dr. F. G. Morgan, Director of the Commonwealth Serum Laboratories, to whom we are greatly indebted for this information. Dr. Morgan made further tests which confirmed the hypersensitivity reported to him. Preparations of insulin were then made from pig and sheep pancreas, in addition to the standard preparation from cattle. The patient was found, however, to be equally sensitive to all three preparations, and insulin therapy was abandoned.

On April 1, 1926, she was admitted for the first time to the Melbourne Hospital, saying that for months she had noticed a lump in the right side, and abdominal pain, which became very severe about four weeks before admission; it was accompanied by vomiting and was followed by jaundice lasting three to four weeks. At this time she apparently had been losing weight, had thirst, polyuria, weakness, loss of power and disturbances of sensation in hands and legs.

The abnormalities noted on physical examination included: (i) great enlargement of the liver, which was smooth, firm and tender; (ii) slight enlargement of the spleen; (iii) impairment of the motor and sensory functions of peripheral type in the legs.

Special investigations were carried out. Blood urea estimation and urea concentration tests, Van den Bergh test, hydatid and repeated Wassermann tests, examination of cerebro-spinal fluid, X ray examination of chest and urinary tract, and examination of a blood film all gave normal results.

Blood sugar, fasting, on April 7, 1926, was 0·15%; on April 12, 1926, it was 0·14%; on April 19, 1926, it was 0·16%; on April 27, 1926, it was 0·18%; on May 3, 1926, it was 0·16%.

The urine (on admission) contained sugar, diacetic acid and acetone; no albumin was present.

The glucose tolerance test was carried out on May 29, 1926. The fasting figure was 0·17%; at half an hour it was 0·22%; at one hour it was 0·28%; at one and a half hours it was 0·31%; at two hours it was 0·28%.

During this period in hospital, and at times previously, the patient suffered from severe metrorrhagia, due to the presence of uterine fibromyomata. On May 14, 1926, supravaginal hysterectomy was carried out by Dr. R. Chambers.

The patient was discharged on May 26, 1926. Throughout this period the patient's urine was kept sugar-free by means of diet. Insulin was given once only, on the fourth day after operation, apparently to counteract vomiting and slight acidosis. Ten units of insulin with twenty grammes of glucose were given; this injection was followed immediately by an attack of urticaria. In October of the same year the patient was readmitted and an unsuccessful attempt made to desensitize her to insulin.

On February 2, 1928, the patient was admitted for an attack of cardiac failure in which there was spasmodic orthopnœa, œdema of the feet, ascites and oliguria. Glycosuria was controlled at this time by diet without insulin, but the urine sometimes contained diacetic acid.

Blood sugar levels at this time were: February 7, 1928, fasting, 0·17%; February 15, 1928, 0·09%; February 20, 1928, 0·11%.

The patient was discharged improved on February 22, 1928.

On February 3, 1930, she was admitted with a history of severe thirst and polyuria for two days, and findings of glycosuria and incipient gangrene of the left toe.

Since 1930 the patient has been under observation in the out-patient department under the care of Dr. W. W. S. Johnston. During this time it has not been possible to control the glycosuria and acidosis by means of diet under out-patient conditions, the fasting blood sugar being rarely less than 0·25%, and on one occasion (April 4, 1932) even reaching 0·36%. During the early part of 1932 the patient frequently complained of pain in the upper part of the abdomen on the right side. There was some tenderness over the gall-bladder area and cholecystography indicated that the gall-bladder function was not normal.

The patient was at this time referred by Dr. Johnston to the Diabetic Clinic. As little further could be done without insulin treatment, Dr. Heale, Assistant in the Diabetic Clinic, asked me to investigate the nature and degree of the sensitivity to insulin.

For this purpose the following series of tests (the results of which are shown graphically in Figures I to VII) have been carried out.

1. On May 9, 1932, intradermal tests were made with five different preparations of insulin, each of which contained 40 units per cubic centimetre (see Figure I): (i) "Commonwealth" (Commonwealth Serum Laboratories). (ii) "Commonwealth" in isotonic saline solution. (iii) "Lilly" (Eli Lilly and Company). (iv) "AB" (Allen and Hanburys Limited). (v) "Wellcome" (Burroughs, Wellcome and Company).

The introduction of 0·05 cubic centimetre of each was followed immediately by a wide flare of erythema, and rapid enlargement of all the wheals with development of many pseudopodial processes (and in one case several subsidiary wheals) within ten minutes of injection. The patient showed obvious signs of distress, trembling, lachrymation and slight cyanosis. She complained of nausea also, and a feeling of tightness in the chest. These signs and symptoms of a general allergic reaction were considered severe enough to warrant the administration of adrenaline, which was given by the intermittent method (one minim at intervals of thirty seconds). When four minims had been given, the patient felt better. She was kept under observation for two hours, during which and subsequently no further untoward symptoms occurred.

These tests showed: (i) that there was no significant difference in the reaction obtained by any of the available brands of insulin; (ii) that the amount of insulin given was far more than the patient could tolerate.

2. The next step was to ascertain the degree of sensitivity. Dilutions of "Commonwealth" insulin were made in the usual diluting fluid (distilled water containing 0·1% hydrochloric acid and 0·1% tricresol), and the patient was given intradermal injections of 0·1 cubic centimetre volume which contained 1/1,000,000 unit of insulin, and as a control the same volume of diluting fluid. The insulin injection was followed immediately by a definite erythematous flare, and a slight enlargement of the wheal, with suggestions of pseudopodia. The diluting fluid wheal enlarged slightly also, but much more slowly and without any flare. There was no general reaction.

It was considered that this response represented the border-line of sensitivity (see Figure II).

3. The similarity of reaction to several preparations of insulin in the first series of tests suggested that the sensitivity was due to the insulin itself. This was further confirmed by tests with preparations of insulin made from sheep, pig and ox pancreas specially for the purpose at the Commonwealth Serum Laboratories. Of each of these 1/2,000 unit was given in 0·05 cubic centimetre volume, and each produced a wheal of similar significance (see

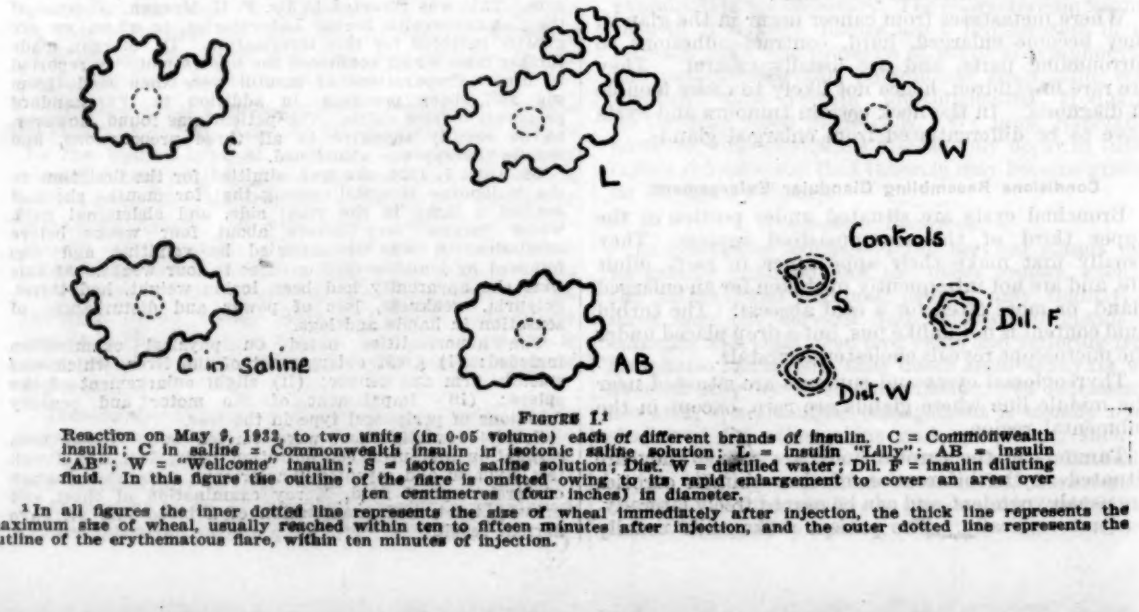

FIGURE I.[1]

Reaction on May 9, 1932, to two units (in 0·05 volume) each of different brands of insulin. C = Commonwealth insulin; C in saline = Commonwealth insulin in isotonic saline solution; L = insulin "Lilly"; AB = insulin "AB"; W = "Wellcome" insulin; S = isotonic saline solution; Dist. W = distilled water; Dil. F = insulin diluting fluid. In this figure the outline of the flare is omitted owing to its rapid enlargement to cover an area over ten centimetres (four inches) in diameter.

[1] In all figures the inner dotted line represents the size of wheal immediately after injection, the thick line represents the maximum size of wheal, usually reached within ten to fifteen minutes after injection, and the outer dotted line represents the outline of the erythematous flare, within ten minutes of injection.

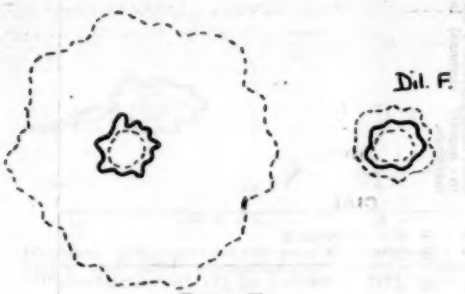

FIGURE II.
Reaction on May 16, 1932, to 1/1,000,000 unit (in 0·1 cubic centimetre volume) and control injection of same volume of insulin diluting fluid.

Figure III). These three injections represent a total amount of 1/666 or 0·0015 unit, and this caused a general reaction, similar in type, but of less severity than that caused by the first tests. Adrenaline (four minims by the intermittent method) gave relief.

As a dose of 1/2,000 gave a marked local and possibly a general reaction, a dose of 1/20,000 was given intradermally one week later. This gave a local reaction (see Figure V), but no general symptoms of allergy.

Intradermal skin tests were also made with alcoholic extracts of pork and beef muscle redissolved in insulin diluting fluid, prepared by Miss Splatt, B.Sc., and with the different constituents of diluting fluid (0·1% hydrochloric acid, 0·1% tricresol and distilled water), both separately and in combination (see Figure IV). None of these provoked any allergic reaction, although in those injections containing hydrochloric acid, both by itself and with tricresol, there was a slight, gradual, regular enlargement of the wheal, reaching its maximum in about half an hour, with no erythema. This, however, was in strong contrast to the immediate flare and rapidly enlarging, irregularly-shaped wheal produced by insulin.

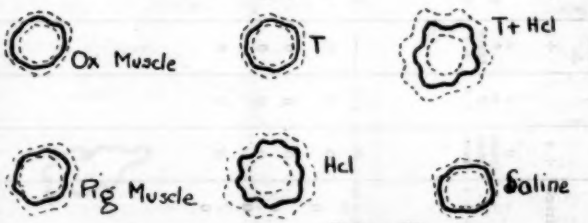

FIGURE IV.
Reactions on March 16, 1932, to extracts of ox and pig muscle, and on June 28, 1932, to the constituents of insulin diluting fluid (each in 0·1 cubic centimetre volume). T = 0·1% tricresol in distilled water; Hcl = 0·1% hydrochloric acid in distilled water; T + Hcl = 0·1% tricresol, 0·1% hydrochloric acid in distilled water; Saline = isotonic saline solution; Dist. W = distilled water.

These tests revealed the following facts: (i) That the reactions varied directly with the amount of insulin in the injection rather than the volume of the latter. (ii) That similar reactions were given by several brands of insulin, irrespective of their different modes of preparation. (iii) That similar reactions were given by insulin from three different species (pig, ox and sheep) prepared by identical methods.

These findings suggested that for desensitization it was immaterial which brand of insulin was used and that 1/20,000 (0·00005) unit would be a safe initial dose. Desensitization was therefore commenced with this amount of standard "Commonwealth" insulin, freshly and suitably diluted in the usual diluting fluid. The subsequent dosage and salient features in the patient's condition are shown in Table I.

Commenting on this table, it will be seen that after some doses an interval of one day was allowed. This was because the previous dose had caused some local reaction and, acting on the procedure usually followed in desensitization, it was thought better at this stage to allow a respite if reactions occurred, although it was realized that the usual method of biweekly injections could not be followed ultimately if insulin therapy was to be established.

There was one setback only. Following a dose of 0·6 unit, the patient complained of slight irritability of, and erythematous patches on, the skin, but as she stated that a similar condition had been present on and off for many years, the next dose was increased. It was followed in about two and a half hours by a considerable general reaction, consisting of severe urticaria, with some swelling of tongue, lips and eyelids. Intermittent administration of four minims of adrenaline gave relief, although two further, less severe, attacks of urticaria occurred about five and eleven hours after the injection, for the second of which four minims of adrenaline were again given.

After this an interval of three days was allowed before the next dose, which was reduced to 0·1 unit and increased gradually. No further general reactions occurred. When one unit was reached it was decided to give daily injections, as therapeutic dosage was in sight.

Till the dose reached five units a single daily injection was given (usually at 12 noon, before dinner), but after this the dose was divided, portions being given before

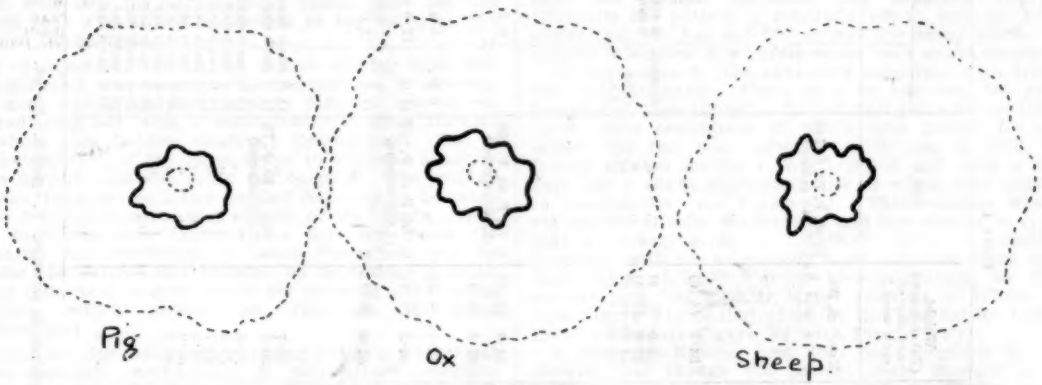

FIGURE III.
Reaction on June 23, 1932, of 1/2,000 unit each (in 0·05 cubic centimetre volume) of insulin made from pig, sheep and ox pancreas.

TABLE I.

Date. Admitted as an In-patient on June 2, 1932.	Glycosuria. Day of Week. 1	2	3	4	5	6	7	Blood Sugar. (Taken last day of each week.)	Weight. (Taken second last day of each week.)	Diet.[1]	Insulin in Units. Day of Week. 1	2	3	4	5	6	7	Remarks.
1932—								%	Kgs. st. lbs.									
June 2–6				++	+	+++	++			C. 50, P. 70, F. 140 (1,740 calories)								Incipient gangrene of toe treated.
June 7–13 ..	++	++	+	0	0	++	++	0·19		,, ,,								Incipient gangrene of toe treated.
June 14–20 ..	trace	++	trace	0	++	+	0	0·16		,, ,,								Incipient gangrene of toe treated.
June 21–27 ..	trace			+		+	trace	0·13		,, ,,								Skin tests with different preparations, and to determine initial dose.
June 28–July 4 ..	+	trace	++		+	+	trace	0·16	53·5 (8 6)	,, ,,								Skin tests with different preparations, and to determine initial dose.
June 5–11 ..	+	+	0	+	+	0	0	0·16	52·6 (8 4)	,, ,,	0·00005	0·0001	0·0002	0·0004	0·0007	0·001	0·002	
June 12–18 ..	+++	+	trace	+	+	++	0	0·19	52·6 (8 4)	,, ,,		0·004	0·007		0·015		0·03	
June 19–25 ..	+	0	trace	0	trace	+	+++	0·23	54·85 (8 9)	,, ,,	0·05		0·08		0·15	0·3		
July 26–August 1	+++	+++	trace	++	++	++	++	0·24	53·95 (8 7)	,, ,,	0·6		1·0				0·1	Urticarial reaction occurred 24 hours after injection on third day. Therefore dose reduced.
August 2–8 ..	+++	+++	0	++	+	++	0	0·20	54·4 (8 8)	C. 71, P. 64, F. 100 (1,440 calories)		0·2	0·4	0·6	0·8		1·0	Diet reduced owing to patient's complaint of great nausea (probably due to hepatic cirrhosis) in mornings.
August 9–15 ..	0	0	0	0	0	0	0	0·16 0·13 on 3rd day.	52·6 (8 4)	,, ,,	1·5	2·5	3·5	4·5	4·0	4·0	5·0	
August 16–22 ..	0	0	0	0	0	0	0	0·165 on 7th day	53·05 (8 5)	,, ,,	6·0	6·0	7·0	7·0	8·0	8·0	10·0	
August 23–29 ..	0	0	0	0	0	0	0	0·18	53·5 (8 6)	C. 103, P. 69, F. 102 (1,606 calories)	11·0	12·0	13·0	14·0	12·0	12·0	12·0	
August 30–September 3 ..	0	0	0	0	0			0·15	52·6 (8 4)	,, ,,	12·0	12·0	14·0	14·0	14·0			
Discharged to Out-Patient Department on September 3, 1932.																		
1932—																		
September 8 ..	+++							0·25	50·7		14·0 each day		8 a.m.					
September 15 ..	+++							0·25	50·7	C. 103, P. 69, F. 72 (1,336 calories)	14·0 each day		6 p.m.					
September 21 ..	+++							0·28	52·0	,, ,,	18·0 each day		12 noon 6 p.m.					
September 29 ..	++							0·24	50·3	,, ,,	18·0 each day							
October 6	0							0·17	49·7	,, ,,	18·0 each day							
October 13	0							0·20	50·2	,, ,,	18·0 each day							
October 20	+							0·23	50·0	,, ,,	20·0 each day							
October 27								0·20	50·5	,, ,,	20·0 each day							
November 3								0·17		,, ,,	20·0 each day							
November 10								0·23		,, ,,	20·0 each day		12 noon					
November 17								0·17			20·0 each day		8 p.m.					
December 1								0·14			20·0 each day							
January 5, 1933 ..	0							0·18	55·5		20·0 each day							

[1] C. = carbohydrate in grammes. P. = protein. F. = fat.

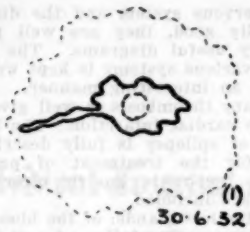

FIGURE V.
Reactions given to 1/20,000 unit (in 0·05 cubic centimetre volume) before and after desensitization: (1) on June 30, 1932, before desensitization; (2) on October 6, 1932, after desensitization.

FIGURE VI.
Reaction given to 1/2,000 unit (in 0·05 cubic centimetre volume) on October 6, 1932, after desensitization (compare Figure III).

breakfast and as the dose increased, before tea, in addition to the midday dose.

The volume of the injections was kept as small as possible, no dose greater than 0·4 cubic centimetre being given in order to eliminate all possible sources of discomfort arising from the injection, as the patient, who had experienced great local and general discomfort, naturally dreaded its repetition. It was found that a small volume (for which a tuberculin syringe was used if necessary) of material given fairly quickly with a sharp needle, well into the subcutaneous tissue, gave far less reaction than one in which portion of the material had remained intradermal.

Site of injection: for all the earlier midday injections the upper arm was used for the convenience it afforded. Each dose was given at a slightly different site on an area radiating out from a conveniently situated freckle; this whole area became relatively desensitized. But it was obvious that, if the patient was to continue administration herself, this site could not be used. The midday dose was, towards the latter part of her stay in hospital, used to desensitize new areas of skin on the thighs. Very slight local reactions followed the first few doses (of two units) but insufficient to cause discomfort, and by the time the patient left hospital on September 3, 1932, she was competent to give herself her morning and evening injections, which caused no reactions if given subcutaneously.

For the first few weeks after leaving hospital the patient did not maintain continuously the satisfactory condition present during the last four weeks of her stay in hospital, there having been glycosuria and a fasting blood sugar content of 0·24% to 0·28% on her first four weekly visits. On the third of these, her morning dose of insulin was increased to twelve units and the urgent necessity of keeping to the diet was stressed. This resulted in improvement in the glycosuria and average sugar content of the blood. There was a remission on October 20, 1932, after which the evening dose of insulin was raised to eight units, making the daily total twenty units. This dose has been continued till the date of writing. Although progress has been hampered by the presence of chronic hepatitis, cholecystitis and pancreatitis, reference to Table I shows that the diabetic condition has definitely improved. Clinically the patient is generally better, and she herself states that she has not felt so well for many years. The insulin injections now rarely cause even slight discomfort.

On September 6, 1932, skin tests were done with 1/20,000 unit intradermally. These gave no reaction, but as the insulin had been diluted to 1/1,000 unit per cubic centimetre (0·05 cubic centimetre of which was given) for some weeks, the test was repeated on October 6, 1932, with freshly diluted insulin. This 1/20,000 unit gave a slight flare and a slight increase in size of wheal with tendency to pseudopodia (see Figure V). This reaction was not obvious for at least ten minutes and was similar in type to that previously given by 1/1,000,000 unit. It contrasted definitely with the explosively rapid response given to the same dose (1/20,000) before desensitization, as did a similar slow but slightly larger reaction to 1/2,000 unit (see Figure VI) to that given by this amount on June 23, 1932. (Compare Figure VI with Figure III.)

A Prausnitz-Küstner test done on September 25, 1932, showed that though the patient could tolerate at this stage at least twelve to fourteen units of insulin, passive transfer of her sensitivity could still be demonstrated (see Figure VII).

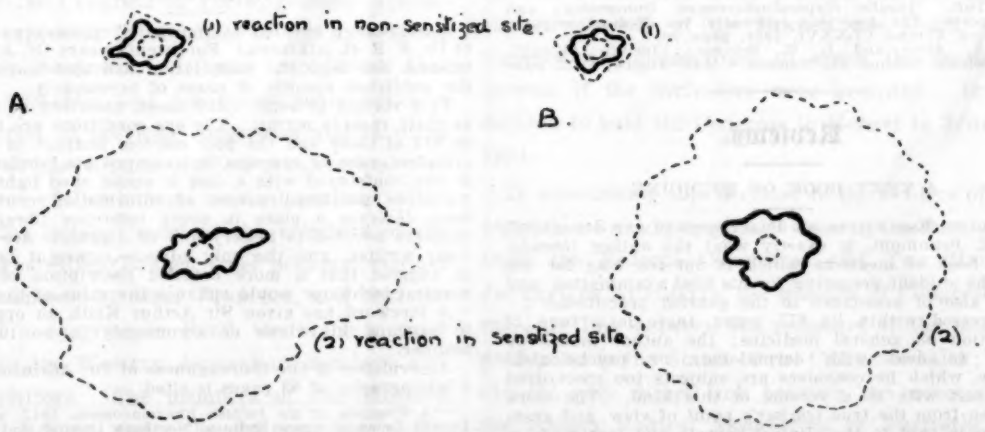

FIGURE VII.
Prausnitz-Küstner reaction. 0·1 cubic centimetre of patient's serum was injected into each of two individuals. A = allergic (asthmatic, sensitive to snake dust). B = non-allergic. After an interval (forty-eight hours in the case of A, twenty-four hours in the case of B), injections of 6/10 unit of insulin in 0·03 cubic centimetre volume were given into two sites in each individual. Site (1): Not previously sensitized. Site (2): Sensitized by injection of the patient's serum.

Discussion.

The theoretical interest in this case centres in the problem of the nature of the active antigenic constituent in commercial insulin. Tuft[1] claims that crystalline insulin can be used to ascertain whether sensitiveness is due to insulin itself or to some other antigenic substance present in the liquid preparation. According to Allen and Scherer,[2] however, the associated allergen is present in small amount even in crystalline insulin. The latter was not available for testing the above patient, but, although the commercial preparations probably contain more extraneous substance capable of acting antigenically than does the crystalline product, they differ from it so slightly in potency that the amount of contaminating substance must be extremely small. Reactions were obtained, however, in this patient with such minute amounts of insulin, and, with four different brands (which almost certainly would contain varying amounts of extraneous substance), were always strictly proportional in intensity to the amount of insulin given. It is, therefore, highly probable that in this case the insulin itself, and not the contaminating substance, was the active agent. Allen and Scherer[2] also suggest that insulin varies in composition in different species, but these results do not support that hypothesis. On the other hand, it is difficult to conceive of sensitiveness to insulin being acquired if the human hormone does not differ in chemical composition from that derived from other species. It still, however, remains possible that fresh antigenic properties are conferred upon insulin itself during the course of preparation *in vitro*.

Summary.

1. A patient with extreme allergic sensitivity to insulin has been investigated. Quantitative estimations were made of the amount of insulin which provoked allergic response to intradermal tests before and after desensitization.

2. Desensitization sufficient to allow of injection of insulin in therapeutic doses was effected.

Acknowledgements.

My thanks are due to Dr. W. W S. Johnston, Honorary Physician to Out-Patients, for permission to publish the records of this case; to Dr. T. Falconer Heale, Honorary Assistant to the Diabetic Clinic, and Miss Beryl Splatt, B.Sc., Biochemist, for much helpful collaboration; to Dr. C. H. Kellaway, Director of the Hall Research Institute, for indispensable criticism and advice, and particularly to Dr. F. G. Morgan, Director, and Dr. J. A. Broben, of the Commonwealth Serum Laboratories, whose cooperation alone made it possible to carry out the above investigations.

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[1] L. Tuft: "Insulin Hypersensitiveness: Immunology and Case Reports", *The American Journal of the Medical Sciences*, New Series, Volume CLXXVI, 1928, page 707.

[2] F. L. Allen and L. R. Scherer: "Insulin Allergy", *Endocrinology*, Volume VI, Number 4, July-August, 1932, page 415.

Reviews.

A TEXT BOOK OF MEDICINE.

"Medicine: Essentials for Practitioners and Students", by G. E. Beaumont, is exactly what the author intends, "a text book of medicine which is not too long for the use of the student preparing for his final examination, and will be also of assistance to the general practitioner".

Compressed within its 677 pages, there is a fund of information on general medicine; the author makes no attempt to deal with dermatology or psychological medicine, which he considers are subjects too specialized to be dealt with in a volume of this kind. The work is written from the true teacher's point of view, and great attention is paid to the clinical aspects and treatment of all the more common and many of the uncommon diseases. The diseases of the nervous system and the diseases of the heart are especially good, they are well presented and illustrated by very useful diagrams. The anatomy and physiology of the various systems is kept well to the fore and dealt with in an interesting manner.

The subject of coronary thrombosis is well given under the heading of coronary cardiac infarction. The ketogenic diet in the treatment of epilepsy is fully described, and diet charts suitable for the treatment of pneumonia, typhoid fever, diabetes, nephritis, gastric ulcer, obesity, constipation *et cetera*, are included.

The diseases of the ductless glands, of the blood, and of the reticulo-endothelial system, are fully and well described. The whole work is worthy of the pen of one of the authors of "Recent Advances in Medicine", so well received a few years ago, and compares favourably with a popular "Synopsis of Medicine", well known to many a harried student who revelled in having his subject served up to him in a compressed form.

[1] "Medicine: Essentials for Practitioners and Students", by G. E. Beaumont, M.A., D.M., F.R.C.P., D.P.H.; 1932. London: J. and A. Churchill. Royal 8vo., pp. 735, with 61 illustrations. Price: 21s. net.

A SYNOPSIS OF THE PHARMACOPŒIA.

A synopsis of the new pharmacopœia has been published by H. Wippell Gadd, who was at one time Lecturer in Pharmacy at the University College, Exeter.[1] It is a very handy little volume, readily carried in the pocket, and will be found useful in making the practitioner familiar with the changes in the pharmacopœia. It contains a full list of the additions to and omissions from the old pharmacopœia, with alterations in nomenclature, changes in composition and in strength, and officially sanctioned abbreviations. A list is given of the elements and atomic weights. Weights and measures in the English and metric systems are given, and the methods of sterilization enjoined by the pharmacopœia are described. A chapter on definitions includes acid value, saponification value, iodine value, optical rotation, and specific gravity. Alcoholic tables give the alcoholic solutions of the pharmacopœia used as menstrua and solvents. The thermometric scales furnish a comparison of the centigrade and Fahrenheit systems. The major portion of the book comprises a complete table of all chemicals, drugs and preparations in the pharmacopœia, including the names, characters and doses (imperial and metric), with remarks on the solubilities, arsenic limits and other data. Finally, there are set out the poison laws of Great Britain, Northern Ireland and the Irish Free State, and the *Dangerous Drugs Acts*. These are of interest in comparison with Australian enactments on the same subjects. It is certainly a useful little volume.

[1] "A Synopsis of the British Pharmacopœia, 1932, and of the Poison Laws of Great Britain, Northern Ireland and the Irish Free State", by H. W. Gadd; Twelfth Edition; 1932. London: Baillière, Tindall and Cox. Medium 32mo., pp. 189. Price: 2s. 6d.

ACROMEGALY.

A monograph entitled "Acromegaly" represents the hobby of Dr. F. R. B. Atkinson.[2] For twenty years Dr. Atkinson's interest has been the compilation and systematization of the published records of cases of acromegaly.

This volume presents 1,319 cases, described as minutely as their records permit. The eye conditions are tabulated in 914 of these and the *post mortem* findings in 265. No symptom, rare or common, has escaped his tabulation, and to one confronted with a case it would shed light such as no other published source of information could. The book deserves a place in every reference library. The chapters devoted to history and to diagnosis are interestingly written, and the only adverse comment to offer is to suggest that a more detailed description of modern surgical technique would enhance the value of the volume.

A foreword has given Sir Arthur Keith an opportunity to expound his views on acromegaly in an instructive manner.

As evidence of the thoroughness of Dr. Atkinson's work, a bibliography of 63 pages is cited.

[2] "Acromegaly", by F. R. B. Atkinson, M.D., C.M., with foreword by Sir Arthur Keith; 1932. London: John Bale, Sons and Danielsson, Limited. Demy 8vo., pp. 266, with illustrations. Price: 21s. net.

The Medical Journal of Australia

SATURDAY, MARCH 25, 1933.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

THE NEXT CONGRESS.

WHEN the Federal Committee of the British Medical Association in Australia, at its meeting in March, 1930, accepted the invitation of the Western Australian Branch to hold the fourth session of the Congress in Perth, general satisfaction was expressed by members of the Association throughout Australia. It was recognized that Western Australia had for many years taken a lively interest in previous congresses and in other activities of the British Medical Association, that the distance of Perth from medical centres in the other States isolated most of the members of the Western Australian Branch from personal contact with the members of other Branches, and that the holding of a congress in Perth would be a great stimulus to the Western Australian members and to their visitors. The members of the Western Australian Branch, under the chairmanship of Dr. D. D. Paton, the President-Elect, applied themselves with energy to the task of organizing the session. Rapid progress was made and there were indications that a successful session would be held. Just about this time the full force of the present financial depression made itself felt. Considerable difficulty was experienced in filling the offices of the several sections; and certain practitioners, while they accepted office, defied precedent by stating that they would be unable to attend. The Executive Committee was anxious and willing to hold the session in Perth, but after many disappointments its members were forced to the conclusion that the session should not be held before October, 1934. The Executive Committee intimated to the Federal Committee that if it seemed not in the best interests of the British Medical Association in the Commonwealth and New Zealand that so long a time should elapse without a congress, the Federal Committee should feel itself at liberty to recall its decision and to arrange for a congress to be held in one of the more central States. At its meeting in September, 1932, the Federal Committee decided that undue postponement of the fourth session was not advisable, and a letter was sent to the Queensland, New South Wales, Victorian, South Australian and Tasmanian Branches inquiring for invitations for the fourth session.

At the meeting of the Federal Committee in Melbourne on March 6, 1933, the Tasmanian representatives repeated the invitation given by the Tasmanian Branch in 1930, that the fourth session be held at Hobart. They pointed out that though the membership of the Branch was small, every member was determined to make the session a success if the invitation were accepted. It was decided to hold the Congress in Hobart in January, 1934.

In announcing this decision to the readers of this journal, we would emphasize once again that, apart from the Federal Committee and THE MEDICAL JOURNAL OF AUSTRALIA, the sessions of Congress are the only link between the members of the medical profession in the States of the Commonwealth; they are the only direct link between the members of the British Medical Association in Australia and New Zealand. The opportunity for the discussion of the many problems common to both Dominions should not be lost. Hobart is admirably suited for

the holding of a medical congress; it is situated in the most beautiful surroundings, and its summer climate may be described as ideal. It is not far from the larger cities on the mainland, and since certain provisions of the *Navigation Act* have been suspended, there will be no lack of shipping accommodation for members of Congress coming from other States. The time at the disposal of the Tasmanian Branch for making the necessary arrangements is all too short, but plans will be made at once. Readers will be informed from time to time of what is being done by the publication in this journal of "Congress Notes". Busy practitioners, even in times of financial depression, must take a holiday; they should determine to take the next holiday in Hobart in January, 1934. We trust that as soon as secretaries have been appointed in the several States of the Commonwealth and in New Zealand, the response to the call for enrolment will be large and spontaneous. A prompt response is the best encouragement that can be offered to the Tasmanians.

Current Comment.

SICKLE CELL ANÆMIA.

Sickle cell anæmia is a well defined disease entity with peculiar features. As far as is known, it is confined to the negro race. It is present from birth and is hereditary and familial. It has points of resemblance to familial hæmolytic jaundice. In both there is erythropoietic activity with anæmia and jaundice. A special type of poikilocytosis occurs in sickle cell anæmia, the red cells being peculiarly elongated and sickle-shaped; hence the name bestowed on the condition by J. B. Herrick in 1910. Other manifestations are ulcers of the legs and sometimes general lymphadenopathy and green coloured scleræ. The patients usually are of slender build and youthful appearance. In the active stage of the disease nutrition and development are markedly disturbed and distinctive alterations are seen in the red blood cells in a fresh sealed blood preparation. In from eighteen to twenty-four hours stellate and crescentic forms develop to undergo active phagocytosis by endothelial mononuclear cells and sometimes polymorphonuclear cells. Red cells number about two million per cubic millimetre and the hæmoglobin value is reduced in proportion. Megaloblasts are rare, but normoblasts are common. Nucleated sickle cells have been noted occasionally. There is a leucocytosis which may reach 20,000 per cubic millimetre. In adults the condition is relatively benign, but in children it is serious. There may be a latent phase diagnosed only by a special blood examination.

G. M. Brandau, of Texas in the United States of America, reports a case of this disease.[1] A poorly nourished, youthful-looking negro, aged twenty-two years, complained of shortness of breath, œdema of the feet and ankles, general weakness and ulcers of the right leg. There was dull pain throughout the chest, but only one abdominal crisis occurred; such crises as a rule occur frequently in the disease. At times increased frequency and burning on micturition took place, but the periods of burning urination and the passage of highly coloured urine did not, as in some cases, always coincide with exacerbations of the illness or with significant changes in the blood count. Prior to admission to hospital the patient had swollen and aching wrist and ankle joints and sore, but not swollen, knees. He had always been jaundiced, but the onset of the disease seemed to date from the age of nine months, since when his health had never been robust. He denied venereal disease. The leg ulcers began at the age of thirteen, healed and recurred. There was no history of familial disease, particularly no rheumatism or jaundice. It was not possible to examine the blood of the relatives, as they lived some distance away in the country. The skin was dry and intensely black, except on the palms and soles, which, with the mucous membranes and palpebral conjunctiva, were pallid. There was generalized lymphadenopathy, slight exophthalmos and peculiarly green scleræ. A to-and-fro murmur was heard over the precordium. The liver was tender and the hepatic dulness was increased. Moist râles were heard at both lung bases, and bronchial and broncho-vesicular breathing over the left lower lobe. The left leg had a scar of a healed ulcer and the right leg had two ulcers, six and three centimetres in diameter. They were circular, shallow, and with clean bases. There was occasional slight pyrexia, the temperature reaching 38·33° C. (101° F.). The pulse rate varied between 80 and 128 per minute. The records of blood pressure were 110 millimetres of mercury (systolic) and 70 (diastolic).

Various blood examinations were made, the red cells varying between 2,000,000 and 2,550,000 per cubic millimetre; the colour index varied from 0·95 to 1·0, and the hæmoglobin percentage from 38 to 50. A platelet count showed 480,000 cells per cubic millimetre. There were many poikilocytes. Sickle cells were numerous, and moist films showed a high percentage of drepanocytic forms. Normoblasts varied from 2% to 4%. There was marked anisocytosis and achromia. The reticulocyte count was 6·3%. The white cells varied from 6,600 to 16,800 per cubic millimetre. Polymorphonuclear cells were 59% to 84%; small lymphocytes, 12% to 36%; large lymphocytes (on one occasion), 4%; and

[1] *Archives of Internal Medicine*, October, 1932.

eosinophile cells 1%. Basophile cells numbered 1% and mononuclear neutrophile cells 2%. The coagulation time was three minutes and the bleeding time two minutes ten seconds. A chemical analysis of the blood revealed calcium 12·5 milligrammes, phosphorus 5·3, and chlorides (as sodium chloride) 737 milligrammes per 100 cubic centimetres of serum. The Wassermann and Kahn's tests gave no reaction. Examination of the fæces revealed no ova or parasites. A Ewald test meal revealed the presence of free hydrochloric acid. The basal metabolic rate was +8%.

Brandau states that this disease is comparatively rare, but that a sickle cell trait is more common and apparently more evenly distributed. In some areas the disease itself is relatively frequent. A tentative diagnosis can be made from the history and signs before a blood examination is made. V. P. Sydenstricker reported an incidence of one in every four hundred negro patients in his clinic. Brandau found in negro workers a percentage of 6·5 exhibiting a sickle cell trait. Sydenstricker, objecting to the classification of symptomless, mild and severe, suggested that the terms latent and active should be applied to the condition. E. V. Hahn, however, points out the inconsistency of saying that a case is one of latent anæmia when the patient is not nor has previously been anæmic. He used the term "sickle cell trait" when sickling occurred in moist blood films, but the red cell count was not reduced and there was no history of prior hæmolytic attacks and no apparent deviation from health. Sickle cell anæmia may be latent in apparently healthy persons subject to periods of active sickle cell anæmia.

The ætiology of this disease is unknown. It would be interesting to know whether it occurs in Australian aborigines or in the native tribes of the Territories of Papua and New Guinea.

THE GOITRE PROBLEM.

THE production of experimental goitre in animals is an important part of the study of thyreoid hyperplasias and intoxications in man and has been proceeding in different laboratories for many years. The observation that certain foodstuffs are goitrogenic is highly important, but even more interesting is the protective or anti-goitrogenic properties possessed by some plants.

David Marine and his fellow workers have spent years in the elucidation of the goitre problem, and a further contribution from this source contains much important and thought-stimulating material.[1]

Cabbage has been shown, by the work of Chesney and Webster and others, to be a potent goitrogenic food for rabbits. It was found that if the cabbage was washed before being hashed and pressed, its properties as a goitre-producer were enhanced. Thus the goitrous substance is relatively insoluble in water, and the assumption is that some inhibitory principle also present in the cabbage is either removed or inactivated by washing. The possibility that the removal of iodine by the washing could account for the change observed is remote. Experiments with other vegetable stuffs such as lucerne and lawn grass proved that these also contained the inhibiting substance, and the addition of these to the animals' dietary prevented thyreoid hyperplasia. Thus the authors have demonstrated the presence of an anti-goitrogenic substance other than iodine, and they roughly measure its potency by its capacity to absorb iodine. They are now further experimenting with an iodine-free preparation of the reducing substance in order to exclude any possible iodine effect, and they think that there is some evidence that the substance under investigation may be hexuronic acid. This substance is certainly contained in cabbage and some grasses and in orange juice. Thus the possible relation with vitamin *C* is both interesting and important.

It will be evident that a vegetable like cabbage is dependent upon its environment both as regards soil and season for its composition. This point has not escaped inquiry, and apparently the observed seasonal variation in cabbage as a goitre-producer depends upon the presence and amount of the augmenters and inhibitors of thyreoid hyperplasia, and not upon the iodine content. The authors hold that though thyreoid hyperplasia is due to deficiency of iodine, this deficiency can be relative as well as absolute. If the iodine in the diet is high the gland will not hypertrophy unless there is some sort of tissue block in which case the abundant iodine is not available and hypertrophy occurs. Thus there is some substance in certain foodstuffs like cabbage and liver that inhibits tissue oxidation and turns what should be an iodine sufficiency into a relative starvation. If the inhibiting substance turns out to be hexuronic acid or a closely related substance, it would be of interest to reflect, as Marine and his co-workers remark, that this substance is found not only in plants, but in the suprarenal gland and the *corpus luteum*. This opens up a speculative field as regards the sex and age incidence of toxic goitres. We are well aware that the results of animal experiment cannot of necessity be aplied *in toto* to man. Nor can we forget that the goitre problem is many-sided, as the work of McCarrison and others has shown. But we do seem to be coming nearer to discovering the mechanism at work in this important morbid state, and what is even more fascinating, there is some indication of the lines along which preventive measures may be applied. However, we must not run on too fast, and anyone who expects to obtain rapid results from research work should give thought to this particular problem of goitre. For over a quarter of a century many fine minds have applied themselves to it. They have achieved much, but can still echo the famous remark of Cecil Rhodes as they contemplate how much there is still to do.

[1] *Journal of Experimental Medicine*, January, 1933.

Abstracts from Current Medical Literature.

BACTERIOLOGY AND IMMUNOLOGY.

The Isolation and Cultivation of Tubercle Bacilli.

Lucy Mishulow (*Journal of Infectious Diseases*, November to December, 1932) discusses the comparative values of different media for the growth of tubercle bacilli. An attempt was made to find a medium which would yield types of growth characteristic for the different types of tubercle bacilli and so serve as an aid to their differentiation. Bordet-Gengou medium was found excellent for the isolation and cultivation of human and bovine strains. Colonies of the human type could be detected in from twelve to fifteen days, and of the bovine type in from two to three weeks. Growth of both types could be detected in many instances much sooner than local lesions in inoculated guinea-pigs. It is suggested that the use of this medium might be substituted for animal inoculation in the isolation of both types. Lowenstein's medium was equally favourable for the isolation of the human type, but entirely unsuitable for isolation of the bovine type, as the latter failed to grow in primary cultures. By using both media human and bovine types of tubercle bacilli could be differentiated by their growth characteristics. Avian tubercle bacilli grow well on both media. *Bacille Calmette-Guérin* gave such characteristic growth on both that it could be differentiated from typical human and typical bovine strains by the morphological differences of the colonies. The Bordet-Gengou medium is particularly recommended because it can be prepared and stored for many months. The necessary amount can be melted and mixed with sterile blood when required.

Skin Tests in Tularæmia.

Lee Foshay (*Journal of Infectious Diseases*, September-October, 1932) summarizes the results of skin tests carried out on patients suffering from tularæmia. The intradermal test is the earliest available diagnostic aid for determining the presence of tularæmia. Positive reactions have occurred as early as the fourth day of illness, that is, practically a week before agglutinins appear in the blood. The test is useful at any time during the first year following infection. The allergic skin response is specific and reliable. Positive reactions are constant in the presence of tularæmia, but do not occur in normal persons or in the presence of other acute infections. The positive reaction becomes negative as a result of artificial desensitization. This change appears to coincide with and to depend on the induction of adequate immunity. Natural desensitization in tularæmia has not been noted during the first year following infection. Sixteen patients were studied with reference to their reactions to intracutaneous injections of antigens made with cultures of the bacterium of tularæmia. All the patients contracted the disease through contact with wild rabbits in or around Cincinnati. Fifteen presented the ulcero-glandular type of infection, and of these two contracted bronchopneumonia and one died. In most cases the period of incubation could be determined accurately. To prevent severe reactions suitable antigens were prepared and used in high dilutions. Heat-killed suspensions could not be used owing to extreme sensitivity. Exceedingly minute amounts of highly diluted suspensions of heat-killed organisms invariably produced extremely severe skin reactions with necrosis, ulceration and profound constitutional symptoms. Nitrous oxide treatment of commercially available concentrate (ten thousand million per cubic centimetre) detoxicates the heat-killed bacteria, and for skin testing a density of one hundred million per cubic centimetre is recommended. An intradermal injection of 0·01 cubic centimetre is given, no reaction appears for thirty-six hours, but by forty-eight hours a circular, tender, elevated area of erythema, five to six centimetres in diameter, with a pale, hard centre, is noted in positive cases. The centre occasionally goes on to vesication, the reaction remains for five days and leaves a brown pigmented area which may persist for several weeks.

Agglutination Reactions in Rheumatoid Arthritis.

M. H. Dawson, M. Olmstead and R. H. Boots (*Journal of Immunology*, September, 1932) report the result of investigations undertaken in reference to the agglutination reactions of sera from patients with rheumatoid arthritis. Sera from two hundred and six patients suffering from rheumatoid arthritis were examined, and sera from two hundred and fifty-six control cases. The most significant results were obtained with strains of *Streptococcus hæmolyticus*. Twenty-seven strains in all were examined, and the majority of specimens of sera from patients suffering from rheumatoid arthritis possessed the property of agglutinating them to an extraordinarily high titre. No correlation between the source of the strain of streptococcus and the agglutination titre was noted. Of forty-one strains of other Gram-positive cocci examined the only ones which were agglutinated to any comparable titre were strains of pneumococci.

Two Forms of Bacillus Diphtheriæ.

J. S. Anderson, F. O. Happold, J. W. McLeod and J. G. Thomson (*Journal of Pathology and Bacteriology*, September, 1931) state that they have been able to recognize two forms of *Bacillus diphtheriæ* and to establish a definite correlation of one form with grave intractable cases of diphtheria, and of the other with milder cases which react to serum treatment. They suggest the names of *Bacillus diphtheriæ gravis* and *Bacillus diphtheriæ mitis* for the two forms. They recommend the use of a special differentiating medium for the isolation of the strains and state that this medium permits determination of the presence or absence of *Bacillus diphtheriæ* at sight in 90% of cultures from throat swabs after eighteen to twenty-four hours' incubation. The medium is a heated blood agar containing 0·04% potassium tellurite, the meat extract in which is never heated above 75° C. and is sterilized by filtration. The formula for its preparation is given in detail. Results obtained on Löffler's slope cultures and on the filtered broth chocolate tellurite plates were compared in six hundred and seven primary cultures from throat and nose swabs; five hundred and fifteen were "negative" by both methods, ninety-two positive by one or other, seventy-eight positive by both, eleven positive on tellurite chocolate, and three positive on Löffler's slope cultures. The authors recommend the following method. Report all colonies with definite characters of *Bacillus diphtheriæ gravis* or *mitis* after eighteen hours' culture on plates of the special medium, reinspect all "negative" or doubtful plates in twenty-four hours and report at sight all then "negative", and make microscopical examination of doubtful colonies (about 10%). Subculture on to glucose, saccharose and starch in serum peptone-water any colonies in regard to which doubt still exists. *Bacillus diphtheriæ gravis* grows with granular deposit and a pellicle in broth, has a flattened lustreless colony of irregular outline, and actively ferments polysaccharides; *Bacillus diphtheriæ mitis* grows with uniform turbidity, has a convex, partly translucent and light-reflecting colony and does not ferment the polysaccharides.

A Practical Technique for Blood Cultures.

Sara Alicia Scudder (*The Journal of Laboratory and Clinical Medicine*, November, 1932) describes a technique which she recommends for blood cultures in large institutions. About twenty cubic centimetres of blood are withdrawn from the median basilic vein under sterile precautions and added to ten cubic centimetres of citrated saline solution (2% sodium citrate in 0·85% saline solution). The tube of blood is allowed to stand until a good proportion of the red cells have settled. Pipette about five cubic centimetres of the settled blood cells and transfer equal portions to two tubes of melted agar. Mix well and pour plates. The second plate will receive the heaviest concentration of red blood cells and bacteria. Transfer fifteen to twenty cubic centimetres

of hormone broth, reaction 6·8 to 7·2, to the test tube in which the blood was collected. This tube will contain the major portion of the plasma and the residue of the red cells. Incubate at 33° to 36° C. The plates and tubes are observed daily for the first three or four days, but are not opened unless growth appears. After this period subcultures are made, the tubes being kept under observation for three or four weeks, the plates being discarded at the end of a week. In many instances where plates have remained sterile organisms have been found in large numbers in the blood sediment. Delicate organisms like meningococci and gonococci have been found to grow profusely in the sediment of red cells.

HYGIENE.

The Lure of Vital Statistics.

T. H. C. STEVENSON (*The Journal of State Medicine*, November, 1932) states that the statistician can supply solutions of questions which are beyond the scope of the clinician, for example, whether this or that pathological condition is commoner in the married than the unmarried. Statistics have demonstrated a very definite excess for uterine cancer in the married, but excess for ovarian disease in the single. Common sense and the rule of three can give excellent results, and it is all important to make generalizations.

Injuries Produced by Contact with Electric Circuits.

ORTHELLO R. LANGWORTHY AND WILLIAM B. KOUWENHOVEN (*American Journal of Hygiene*, November, 1932) have investigated accidents to human beings caused by electric currents and have utilized susceptible animals, the dog for investigation of ventricular fibrillation and the rat for changes in the nervous system. Alternating currents are more dangerous than continuous currents. The number of cycles per second is of great importance, for at high frequency no injury occurs. However, in the industrial range of 25 to 60 cycles no difference was found. In rats, while the alternating current was more dangerous at 110 and 220 volts, the continuous current at 500 and 1,000 volts produced much more injury in the nervous system and elsewhere. The lightning generator at 200,000 volts, used for a few microseconds, always killed the animal if the central nervous system were traversed. One-third of fatal human accidents occurred at the ordinary 110 or 220 voltages. Sixty or even 46 volts with an alternating current have been fatal. The muscle contraction makes it difficult to let go and prolongs the contact. High voltage currents often throw away the victim. Contact with electric fixtures, while the person is well grounded, is the most common cause. Good grounding occurs in bathrooms when a person is standing in water, or on concrete or on iron steps, or in shoes with large metal nails. No electric appliance should be handled in the bath. The sale of poorly insulated devices should be prohibited. Floors and rails should be covered with insulating rubber, hardwood, porcelain *et cetera*. The traverse of the central nervous system is particularly dangerous. Sweaty hands reduce resistance. Consciousness is sometimes retained or quickly returns. Histological damage to nerve cells was demonstrated, almost of an explosive character, especially with the continuous current; hæmorrhages are more common with alternating current. In the dorsal and somatic nuclei of the vagus, cells were cleared of Nissl's granules and the nucleus was displaced with swollen nucleolus. Purkinje cells are readily injured. Axis cylinders suffer also, especially in the posterior columns. Intense heat may be generated in the skull. Of all deaths 90% are due to ventricular fibrillation, hence, though artificial respiration should always and immediately be employed, the chief need is a method of restoring normal heart rhythm. In these experiments drugs such as quinidine, urethane, adrenaline *et cetera* produced no effect. Injection of potassium chloride, followed by the injection of calcium chloride into the fibrillating heart, was found by the authors to be successful. They describe the method in detail.

Malarial Therapy of Paresis.

MARK F. BOYD AND WARREN K. STRATMAN-THOMAS (*The American Journal of Hygiene*, January, 1933) describe the technique for the use of infected anopheline mosquitoes in the natural induction of malaria in treating general paresis. The method of transference of malaria (usually from another paretic patient under treatment) by inoculation of blood may also transfer neurotropic strains of syphilis as well as other infections, and has been therefore prohibited by the British Ministry of Health. Wild insects are employed, fertilized unfed females are then selected and protected against exposure to heat, direct sunlight and wind. Insectary-reared unfertilized females may also be placed in cold storage and fed on glucose, which does not stimulate ovarian development. *Plasmodium vivax* (the benign tertian parasite) is mostly used. The infecting patient must be carefully investigated to eliminate a double infection; density and maturity of gametocytes and the ratio of microgametocytes decide the selection. Failure to observe exflagellation does not eliminate. An infection of moderate intensity is sought. Intensity is decided by the number of cysts in the stomach wall. The darkened cages are applied to the warmed thigh for one hour. Mosquitoes found with visible blood in the intestine are kept separately at a temperature of 20° to 22° C. and with humidity at saturation point, and are fed at intervals on rabbits. With the appearance of sporozoites in the salivary glands the mosquitoes go into cold storage of 2° to 17° C. and are readily effective up to six weeks, though infection has been still present after even sixteen weeks' storage. After biting the patient, the mosquito is tested for definite sporozoites in the salivary glands and two infected mosquitoes are employed. Very few patients prove refractory. Neurosyphilis of long standing, "galloping paresis", extreme emaciation and debility, cardio-vascular or renal disease, severe anæmia, and any chronic infectious disease are regarded as contraindications. Attempts at reinoculation with the same strain of *Plasmodium vivax* are usually unsuccessful in whites already infected, but not completely treated. Adult negroes are very refractory to inoculation with *Plasmodium vivax*, and if malaria develops it terminates spontaneously after two or three rigors. The incubation period is about two weeks. The period for the febrile attack varies with the patient, the clinical type of response, the appearance of serious symptoms. Sinton's treatment is used to terminate the infection. This is a combination of a preliminary purge, a 30 cubic centimetre (one ounce) draught containing sodium bicarbonate 3·6 grammes (60 grains), sodium citrate 2·4 grammes (40 grains), calcium carbonate 0·18 gramme (3 grains), and, after three doses in three hours, a quinine mixture of 0·6 gramme (10 grains) quinine sulphate, citric acid 1·8 grammes (30 grains), magnesium sulphate 3·6 grammes (60 grains) to 30 cubic centimetres (one ounce) three times a day for a week. Once daily after food 0·015 gramme (one-quarter of a grain) of "Plasmochin" is administered.

The Climatic Factor in Acute Nephritis.

C. A. MILLS (*American Journal of Hygiene*, November, 1932) has made an analysis of death rates from acute nephritis in whites in North America, calculated both as an incidence per 100,000 of the population and as a percentage of deaths in each main age group throughout life. Definite regional differences are revealed, the southern States and Gulf region rates being more than twice as high as in the Great Lakes region and the Pacific north-west. The belt from Boston to Chicago is best, and from San Francisco to Seattle next, while the area from South Carolina to the Mexican border is worst. Even the coldest part of Canada has distinctly better (about average) figures. The writer claims a correlation of these maps with a map showing indices of climatic stimulation, as has already been shown in metabolic disease death rates. The greater the climatic stimulation, the greater the metabolic changes and the greater the resistance to acute nephritis.

British Medical Association News.

MEETING OF THE FEDERAL COMMITTEE.

A meeting of the Federal Committee of the British Medical Association in Australia was held at the Medical Society Hall, Albert Street, East Melbourne, on March 6, 1933, Dr. J. Newman Morris, the Vice-Chairman, in the chair.

Representatives.

The following representatives of the Branches were present:

New South Wales: Dr. J. Adam Dick, C.M.G., Dr. C. H. E. Lawes.

Queensland: Dr. D. G. Croll, C.B.E., Dr. E. S. Meyers.

South Australia: Dr. Bronte Smeaton.

Tasmania: Dr. Gregory Sprott, Dr. A. W. Shugg.

Victoria: Dr. F. L. Davies, Dr. J. Newman Morris.

Dr. C. H. E. Lawes acted as proxy for Dr. F. A. Hadley, and Dr. J. Newman Morris acted as proxy for Dr. D. D. Paton, of the Western Australian Branch.

Minutes.

The minutes of the previous meeting of September 1, 1932, copies of which had been sent to members after the meeting, were submitted and signed as correct.

Financial Statement.

The financial statements for the six months ended December 31, 1932, prepared and audited by Messrs. Coates, Cunningham and Company, Chartered Accountants, together with the Australasian Medical Congress (British Medical Association) accumulated funds account, were presented and adopted.

Office-Bearers.

It was resolved that Sir Henry Newland be reappointed Chairman, and Dr. J. Newman Morris Vice-Chairman of the Federal Committee.

Dr. C. H. E. Lawes was reappointed Honorary Secretary and Honorary Treasurer.

Dr. J. Adam Dick was thanked for having acted as Chairman during the absence of Sir Henry Newland and Dr. J. Newman Morris.

Messrs. Coates, Cunningham and Company were reappointed Auditors.

Authority was given to Dr. J. Adam Dick and Dr. C. H. E. Lawes to transfer the accounts of the Federal Committee to the Federal Council as soon as the Federal Council had been incorporated.

Medical Officers' Relief Fund.

A report was received from the trustees of the Medical Officers' Relief Fund (Federal). The trustees made certain recommendations in regard to the use of the fund for the relief of the widows and children of deceased medical officers. The recommendations of the trustees were approved and it was resolved that the local trustees of each State should be informed of the policy of the trustees.

Finance.

The amount of the contribution which should be paid by the Branches to the general expenses of the Federal Committee was discussed. The Honorary Secretary pointed out that the Federal Committee had power to levy a *per capita* payment of two shillings *per annum*. It was decided that a *per capita* payment of one shilling should be made for the ensuing twelve months.

Accident Insurance in Western Australia.

At the previous meeting of the Federal Committee a letter was received from the Western Australian Branch asking for advice in regard to a proposed agreement with an insurance company for accident, sickness and fire policy cover for members of the Branch. The insurance company proposed to accept proposals for insurance from members of the Branch at a low rate of premium, if the Branch Council would notify members of the arrangement and would advise them to effect insurance with the company in question and with no other.

At the previous meeting the Federal Committee suggested that the Western Australian Branch Council should obtain a legal opinion on the matter, and also intimated that it could not approve of a Branch Council entering into such business relations. The Honorary Secretary read a letter from the Western Australian Branch in which it was stated that the Branch did not intend to proceed further in the matter.

Members of the Association at Broken Hill.

A letter was read from the South Australian Branch regarding the Broken Hill members of the British Medical Association. It was pointed out that these members had always belonged to the South Australian Branch. They now wished to be transferred to the New South Wales Branch. The Honorary Secretary pointed out that the matter was not a simple one. According to the Articles of Association of the New South Wales Branch, practitioners entitled to membership included practitioners resident in New South Wales with the exception of those who lived at Broken Hill. The Articles of Association of the South Australian Branch included as potential members practitioners resident at Broken Hill. The Honorary Secretary pointed out that before the transfer desired by the Broken Hill practitioners could be effected, the Articles of Association of both Branches would have to be altered. He explained that he had put the position clearly before the Broken Hill members.

Catalogue of Scientific and Technical Publications.

The Honorary Secretary read a letter from the Council for Scientific and Industrial Research regarding a "Catalogue of Scientific Periodicals in Australian Libraries". This catalogue was published in 1930 by the Council for Scientific and Industrial Research, and the Council now wished to have the catalogue revised and brought up to date. The Council pointed out in its letter that the necessary revision, editing and so forth would involve the expenditure of several hundred pounds, and it suggested that the Federal Committee might, in common with other scientific bodies, make a grant from its funds for this purpose. It was pointed out that the Federal Committee had no power to dispose of its funds in this way and it was resolved that the matter should be left to the Branches and that they should be recommended to give favourable consideration to the request.

Fees for Attendance on a Medical Practitioner.

A letter was read from the South Australian Branch Council asking for guidance in the matter of fees charged by one medical practitioner to another. It was pointed out that three members of the Branch had forwarded accounts to the executors of the estate of a deceased medical practitioner. The accounts had been forwarded in response to a telephone communication from the office of the executors. On receipt of the account the executors had refused to pay. The medical attendants wished to know the opinion of the Federal Committee. During discussion several authorities were quoted to the effect that free attendance on a medical practitioner was always an act of grace and that the question of payment was always in the discretion of the attending practitioner. It was decided that the South Australian practitioners had acted ethically and that the opinion of the authorities referred to should be forwarded to the Branch.

Death Certificates to Insurance Companies.

A letter was received from the South Australian Branch regarding the supply of death certificates to insurance companies. An insurance company had accepted a proponent for insurance without subjecting him to any form of medical examination. Within a comparatively short time of the completion of the proposal the insured person

died of pulmonary tuberculosis. On the receipt of the certificate of death the insurance company wrote to the attending practitioner asking for particulars of the duration of the patient's illness and asking questions about the probable knowledge by the patient of the duration of his illness. The medical attendant had refused to supply any information. It was resolved that the South Australian Branch be informed that the Federal Committee approved of the attitude adopted by the attendant practitioner.

British Medical Association Scholarships and Grants.

The Honorary Secretary read a letter from the Assistant Medical Secretary of the Association (London) asking the Federal Committee to cooperate with the Council of the Association in the matter of British Medical Association Scholarships and Grants. It was noted that requests for information had been received from three Australian practitioners and that an application for a scholarship had been received from a practitioner resident in Victoria.

Subscription from Overseas Branches.

At the previous meeting of the Federal Committee the question of a reduction of the annual subscription paid by the Branches in Australia to the parent body was discussed. The Honorary Secretary reported to the previous meeting that he had received a letter from Sir Henry Newland to the effect that the matter had been discussed with the Council of the parent body, that Dr. T. P. Dunhill and Professor R. J. A. Berry had joined him (Sir Henry Newland) and Dr. Newman Morris in making representations to authorities of the parent body, but that no finality had been reached.

Dr. J. Newman Morris gave an account of the discussions and correspondence which he and Sir Henry Newland had had with the home Council. He said that Dr. Dunhill and Professor Berry had been most helpful and that the Council had adopted a sympathetic attitude. The Council held that the *per capita* cost of *The British Medical Journal* to overseas members was not so high as was commonly believed. Dr. Morris quoted the Council's figures in support of this view. He also stated that the Council was at present considering a proposal made by Sir Henry Newland to the effect that the taking of *The British Medical Journal* should be optional to members of Branches which had a journal of their own. It was resolved that further consideration be postponed till the annual meeting of the British Medical Association in Melbourne in 1935. It was further resolved that the thanks of the Federal Committee should be conveyed to Dr. Dunhill and Professor Berry for their assistance in the matter.

Federal Council.

At its previous meeting the Federal Committee determined that the Federal Council should be incorporated and that certain amendments to the proposed Memorandum and Articles of Association required by the Minister for Justice should be made. The Honorary Secretary presented to the meeting the completed copies of the Memorandum and Articles of Association. These were signed by the members of the Federal Committee and the signatures were duly witnessed.

The Chairman pointed out that this was the last meeting of the Federal Committee and that the next time the representatives of the Branches met they would meet as the Federal Council. He also stated that it would be necessary to hold a meeting of the Federal Council within four months of its incorporation.

A Representative Body in Australia.

The Honorary Secretary read the following notice of motion from the Queensland Branch:

> That the desirability of forming a Representative Body on the lines of the Representative Body of the Association in England to hold a business meeting at the time congresses are held be discussed at the next meeting of the Federal Committee and that the other Branches be asked for an expression of opinion in the matter.

The Honorary Secretary said that he had forwarded this proposal to the members of the Federal Committee and to the Branches. The Western Australian Branch was not in favour of the proposal. The New South Wales Branch had decided to defer consideration until fuller details of the proposal were available. The South Australian Branch decided to leave the matter in the hands of its representative.

After it was decided that the Federal Committee should discuss the matter, Dr. Meyers explained the views of the Queensland Branch. He said that there were many questions on which a policy for the whole of Australia was needed, questions such as hospital policy, friendly society practice and so forth.

A general discussion followed, in which all the members took part. The view was expressed, *inter alia*, that it would be unwise to use the name "representative body" and that some such word as convocation would be more suitable. It was resolved:

> That this Committee approves of the suggestion to examine the possibility of holding periodical general meetings of selected members of the various Branches in Australia, and appoints a subcommittee consisting of Dr. Croll and Dr. Meyers, with power to coopt other members, to formulate a scheme to place before a future meeting of the Federal Council for consideration.

British Medical Association Annual Meeting.

At its previous meeting the Federal Committee resolved to ask Sir Henry Newland to approach the parent Association in regard to the possibility of holding the annual meeting of the British Medical Association in Victoria in 1935, the occasion being the centenary of the City of Melbourne. The Honorary Secretary reported that he had communicated with Sir Henry Newland by wireless and by letter, and that the Council of the Association had accepted the invitation by wireless. The Council suggested that if the annual meeting were held in September, 1935, a large number of officials and members of the Association from the United Kingdom would be able to attend. The Council intended to advise the Representative Body in July, 1933, accordingly.

Australasian Medical Congress (British Medical Association).

At its previous meeting the Federal Committee discussed the proposal of the Executive Committee of the Fourth Session of the Australasian Medical Congress (British Medical Association) to postpone the session, if held in Perth, until October, 1934. The Federal Committee decided at that meeting that any postponement beyond 1933 was not in the best interests of the profession and that if the Executive Committee of Congress in Perth did not find it practicable to hold a congress by that date, a congress should be held as early as possible in another State. A letter was read from Dr. D. D. Paton, the President-Elect, in which he deplored the lack of response from members in the eastern States and in which he pointed out that the members of the Association in Western Australia were most anxious that a congress should be held in that State. He hoped that a congress would be held in Western Australia at the earliest opportunity.

The Honorary Secretary reported that he had sent a common letter to the Queensland, New South Wales, Victorian, South Australian and Tasmanian Branches, inquiring for invitations to hold a session. He said that the Queensland Branch had stated that the holding of a session in Adelaide in 1934 would be acceptable. The New South Wales Branch had offered to hold a session in Sydney in 1934, in the event of no other Branch offering. The South Australian Branch had offered to hold a session in Adelaide, provided that no arrangements were being made for the holding of the annual meeting of the parent Association in Melbourne in 1934. The Tasmanian Branch had issued an invitation for the holding of the session in Hobart in January, 1934.

Dr. A. W. Shugg and Dr. Gregory Sprott said that the members of the Tasmanian Branch were hopeful that their invitation would be accepted. They felt confident

that a successful congress could be held in January, 1934, and that the Branch would spare no effort to make the session successful. It was unanimously resolved that the invitation of the Tasmanian Branch should be accepted.

In view of the shortness of time for making the necessary Congress arrangements, the Vice-Chairman (and after his return to Australia, the Chairman) was given authority to approve the various appointments of the Executive Committee to the Hobart session.

A grant of £100 was made to the Tasmanian Branch for preliminary expenses in connexion with the Fourth Session.

The Naval Medical Service.

Further reference was made to the conditions of service of medical officers in the Royal Australian Navy. This matter had been under discussion at several previous meetings of the Federal Committee. The Honorary Secretary reported that he had received a reply from the Minister for Defence, advising that he could not alter his view already expressed to the Federal Committee. The Honorary Secretary also reported that he had written to Sir Henry Newland in England asking him to secure a copy of the report of a committee appointed in June, 1931, by the Prime Minister of England "to investigate the causes of the shortage of officers and nurses in medical and dental branches of the three defence services". Sir Henry Newland had replied that the report was not yet available. It was resolved that further action should be suspended pending the receipt of a copy of the report. It was also resolved that in the interim inquiries should be made regarding the rank and pay of certain senior officers in the service, with a view to making further recommendations to the Minister.

Reference was also made to the question of medical attendance on injured dockyard workers. This matter was discussed at the previous meeting. The subject at issue was the attendance of civilian workers at the dockyard by naval medical officers. It was held that the remuneration of naval medical officers for this service was not adequate and that patients were being taken from their regular medical attendants. The Honorary Secretary reported that a letter had been received from the Captain-Superintendent at Garden Island, advising that the matter had not finally been dealt with by the Naval Board. It was resolved that a further letter be written to the Naval Board, as the matter appeared to have been overlooked.

Federal Health Services.

At its previous meeting the Federal Committee determined to send a letter to the Minister protesting against the retirement of any permanent medical officer of the Commonwealth Department of Health without compensation. The Honorary Secretary reported that he had received a reply to the effect that no hardship had been inflicted on any member of the department. The letter was received.

Dr. D. G. Croll also referred to the elimination of the Division of Tropical Hygiene of the Commonwealth Department of Health. He held that in abolishing the Division and substituting nothing in its place the Commonwealth Government had rendered impossible the settlement of tropical Australia by a working white race. He regarded the matter as of national importance. After discussion it was resolved:

> That these views, together with the four resolutions of the 1920 Congress of Interstate representatives, be laid before the Commonwealth Government and that the Federal Committee urge upon the Commonwealth Government the vital necessity of immediately establishing an adequate and efficient public health administration in tropical Australia, Papua, and the Mandated Territory, either by the complete restoration of the Division of Tropical Hygiene or by an efficient substitute for each or all of these territories.

Australasian Pharmaceutical Formulary.

The Federal Committee discussed a notice of motion received from the New South Wales Branch, as follows:

> That it be a recommendation to the Federal Committee: (i) That a committee be appointed to cooperate with the Pharmaceutical Association of Australia and New Zealand in producing a new edition of the Australasian Pharmaceutical Formulary. (ii) That a formulary suitable for use in contract practice and public hospitals be compiled as a supplement or addendum to the Australasian Pharmaceutical Formulary.

The motion received the general approval of members, and Dr. F. L. Davies pointed out that a subcommittee of the Victorian Branch Council was doing useful work in the matter. It was resolved that the matter should be referred to the Victorian representatives (Dr. F. L. Davies and Dr. J. Newman Morris) for report and that the Victorian representatives should have power to coopt one member from each State and that they should seek the help of the Victorian subcommittee.

Free Medical Examinations by an Insurance Company.

The Honorary Secretary read a letter from the Queensland Branch regarding the action of an insurance company in providing free periodical medical examination for its policy-holders. The Queensland Branch believed that owing to the way in which the circular letter to policy-holders was worded, some patients were being diverted from their regular medical attendants. The Victorian representatives pointed out that no exception could be taken to the circular letter of the same company which was issued to Victorian policy-holders. The directors of the insurance company had expressed a willingness to comply with the wishes of the Association. It was resolved that a letter be written to the insurance company asking that adequate safeguards, such as those used in Victoria, should be adopted in all circular letters issued by the company.

A Hospital Policy for the British Medical Association in Australia.

The Honorary Secretary read a letter from the Queensland Branch containing a proposal for the formation of a hospital policy for the British Medical Association in Australia. After discussion the latter part of the motion was withdrawn and the following clause was adopted:

> That, in anticipation of the formation of the Federal Council, the Federal Committee should appoint a special committee to deal with a hospital policy for the members of the Australian Branches of the British Medical Association and that it be a recommendation that this committee shall be a committee of the Federal Council when formed.

In the discussion reference was made to the hospital policies drawn up by several of the Branches, and the view was expressed that, although conditions of practice differed widely in the several States and in different parts of the same State, it would be possible to lay down certain general principles on which the Branches might act. It was resolved that Dr. D. G. Croll and Dr. E. S. Meyers should form a subcommittee to draft a policy and that they should have power to coopt one member from each State.

Thanks.

Votes of thanks were accorded to the Council of the Victorian Branch for their hospitality and for the accommodation provided for the meeting, and to the Vice-Chairman, Dr. J. Newman Morris, for presiding at the meeting.

SCIENTIFIC.

The first meeting of the Section of Surgery of the South Australian Branch of the British Medical Association was held on November 9, 1932, at the Adelaide Hospital, Dr. A. M. Cudmore, the President, in the chair.

After the adoption of the rules of the Section, the meeting proceeded to the demonstration and discussion of clinical cases.

Acute Osteomyelitis Treated by the Winnett-Orr Method.

DR. E. F. WEST showed a patient who had suffered from acute suppurative arthritis of the ankle joint and acute osteomyelitis of the fibula, arising as a complication of burns in a child of twelve months, treated by the Winnett-Orr closed method. Incisions in the joint and bone were packed with sterile vaseline gauze and the whole limb was encased in a padded plaster cast. Four plasters were applied at intervals of three to four weeks. The child developed pneumonia a few days after the commencement of the suppurative condition.

A good functional result was obtained, and by the avoidance of frequent and painful dressings shock was minimized.

Meningo-Myelocele.

DR. L. A. WILSON showed a girl, aged sixteen years, with a meningo-myelocele over the lumbo-sacral spine. The spine was "leaking at birth" and had healed at the age of two years. Three years ago, following an attack of whooping cough, the spine "leaked again" and had done so ever since.

The patient was very stout, mentally backward, and had poor control of the rectal and vesical sphincters. Her head at six months of age was as large as at the present time, fifty-five centimetres (twenty-two inches) in circumference. The meningo-myelocele was five centimetres (two inches) in diameter and partly covered by skin. The apex was tender, ulcerated, and discharging clear fluid. The lower limbs showed a flaccid paralysis with vasomotor changes. The sensation was normal. The legs could not be raised off the bed. X ray examination revealed an absence of the neural arch of the fifth lumbar and all the sacral vertebræ and a posterior dislocation of the right hip joint. The interesting point was the age of the patient and the absence of meningitis. No treatment was suggested.

Myositis Ossificans.

DR. ALAN H. LENDON showed a man, aged fifty-three years, a labourer, who, in November, 1931, had been knocked off his bicycle and had sustained a lateral dislocation of the right elbow. This had been manipulated under anæsthesia and the reduction confirmed by X ray examination. By April, 1932, the elbow was still very stiff. He had only about ten degrees of movement on each side of the right angle, and a hard mass could be felt in the situation of the *brachialis anticus* muscle. An X ray picture confirmed the diagnosis of *myositis ossificans*.

The arm was immobilized in plaster for ten weeks and another X ray examination was then made, and it revealed reduction in size of the bony mass, the outlying spicules then being completely absorbed. The arm was again immobilized for a further twelve weeks and at the end of that time further absorption had taken place, though there was still a considerable mass of bone present.

For two months the patient had massage and exercises, and after that had about twenty-five degrees of movement on each side of the right angle, and the latest skiagram showed that the exercise had not excited any further bone formation.

Actinomycosis.

Dr. Lendon also showed a man, aged sixty, a warehouseman, who, in October, 1931, had developed pains in the left cheek. An X ray examination revealed an impacted wisdom tooth in the left lower jaw. This was extracted with considerable difficulty, but the pain persisted, and in January, 1932, he developed a brawny swelling behind the angle of the jaw on the left side. An incision was made into this by Sir Henry Newland, but no pus was obtained. A piece of tissue was removed and showed evidence of chronic inflammation. Subsequently the wound discharged some offensive pus and then slowly healed.

The patient returned in April, 1932, with an abscess below the left zygoma, which was incised, and some thin seropus was obtained. After that several other abscesses formed and pointed on the face and side of the neck and discharged small quantities of thin pus. Always there was a tendency to heal and to break down again.

The pus was examined on several occasions and only *Staphylococcus aureus* was found. Not until October, 1931, were granules obvious in the discharge, and then the *Streptothrix actinomyces* was found. Administration of tincture of iodine in milk in increasing doses improved his condition considerably. At the time of demonstration no new abscesses had formed and the sinuses present were healing.

THE ANNUAL MEETING OF THE OPHTHALMOLOGICAL SECTION OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Victorian Eye and Ear Hospital, Melbourne, on January 18, 1933, DR. ARTHUR JOYCE in the chair.

Election of Office-Bearers for 1933.

The following office-bearers were elected for the ensuing twelve months:

President: Dr. J. Ringland Anderson.
Honorary Secretary and Treasurer: Dr. W. M. Box.
Auditor: Dr. Leonard Mitchell.
Committee: Dr. Arthur Joyce, Dr. Frank Spring, Dr. L. Mitchell, and Dr. W. J. L. Duncan.

Perforating Wound of the Eye.

DR. MARK GARDNER showed a boy, aged sixteen years, who, a month previously, through the bursting of a glass electric bulb in front of the eyes, had sustained a large perforating wound of the cornea of the left eye, with prolapsed iris.

Under a general anæsthetic a glass splinter had been removed from the anterior chamber, iridectomy performed, and the wound covered with a conjunctival flap. The eye was now quiet and the patient had been discharged from hospital.

Cavernous Hæmangioma of the Eyelid.

DR. A. S. ANDERSON presented a baby, three months old, with a cavernous hæmangioma of the right upper eyelid. The mother had noticed the swelling three weeks after the baby's birth and thought it had increased in size. Members considered that the condition was best treated by electrolysis.

Intraocular Metallic Foreign Body.

Dr. Anderson's second patient was a young man, aged twenty-six years, whose right eye had been penetrated by a metallic foreign body while he was hammering a piece of steel. Examination showed a penetrating wound through the cornea and iris at the four o'clock position, and a skiagram showed an intraocular metallic foreign body close to the optic disk. No response to the magnet had been obtained, though it had been used on three occasions. The eye was quiet. The general opinion of members was that it was safe to keep the eye.

Keratoconus.

DR. G. A. BREW read the clinical notes of two cases of keratoconus seen during the year at Saint Vincent's Hospital. Only one of his patients was present for demonstration.

Miss Le S., aged fifteen years, was a healthy girl of good physique and development. The only general abnormality was a slight nodular enlargement of the thyreoid gland. Inspection of the left cornea showed a conical condition. The eyes were otherwise normal. Lenses and fundi were normal. The vision of the right eye, uncorrected, was $^6/_{12}$ barely; of the left eye $^1/_{36}$ partly. Retinoscopy revealed grossly irregular reflexes, especially in the left eye.

On subjective trial vision of the right eye was two letters of $^6/_{12}$ with $-0{\cdot}75$ sphere $+3{\cdot}00$ cylinder axis 15°

downwards and outwards. Vision of the left eye improved to $^{6}/_{6}$ with −26 sphere. Ophthalmometer readings were: right eye, 46 diopters in 50° meridian, 50·5 diopters in meridian vertical to that; of the left eye, 56¼ diopters in 170° meridian, 62 diopters vertical to it.

On slit lamp examination, the right eye was normal. The left eye showed an increase in convexity of both anterior and posterior surfaces of the cornea. There was no obvious thinning or development of cone, there was accentuation of the corneal nerves, one faint small scar in the parenchyma, an area of definite obliquely disposed "split lines" in the posterior layers of the parenchyma, and an interrupted faint Fleischer's ring. In addition there were several minute specks of pigment on the anterior capsule of the lens.

The left eye only was corrected with the contact glass of Zeiss. Several glasses were tried, the best result achieved being two letters of $^{6}/_{6}$. Tolerance under test conditions seemed good.

Miss G., aged twenty-four, a healthy woman of nervy type, a domestic servant, presented an old stationary left keratoconus. The right eye showed a scarred white cornea with perception of light only, the ill result of an operation performed seven or eight years ago. The left eye showed faint apical scarring, a good operative result dating from the same time. Notes of the left eye only were presented. Vision (uncorrected) was $^{2}/_{6}$. Save for the corneal condition, ocular examination revealed no abnormality. After tedious retinoscopy and subjective tests, two letters of $^{6}/_{6}$ were read, with −14·00 sphere and −3·50 cylinder with axis of 130° downwards and outwards. Ophthalmometer readings were 40 to 41 diopters in one meridian, 48 to 49 diopters in meridian vertical to it.

Slit lamp examination revealed definite increase of corneal curves with pronounced apical thinning at the cone and scarring near the apex.

For this patient a contact glass of Zeiss was ordered. Scleral and corneal curves indicated by the figures 2·85 with 2·50 sphere ground on the anterior surface gave a result of reading four letters of $^{6}/_{6}$. The patient had been wearing this glass for several hours a day for three months with moderate comfort. She was able to insert the glass without difficulty, using no appliances or assistance, and was very satisfied.

Dr. Brew then discussed his cases. He stressed the great importance of measurement of the corneal radii by means of the ophthalmometer in cases of high astigmatism. Only by this means, following the teachings of Vogt, might keratoconus in its early stages be detected. Conical cornea was to be suspected with oblique astigmatism when one of the radii gave a reading approaching 50 diopters. (The normal curve approximated to 45 diopters.) The first case illustrated this point. The left eye had an obvious conical cornea, the irregularity showing up well with Placido's disk. The right eye, on the other hand, could not be diagnosed as having a conical cornea by any method of examination or instrument save the ophthalmometer. With that method, too, the mire reflections were still quite regular. Obviously, early diagnosis was important if any treatment was to be of avail.

For treatment of this patient he proposed constant wear of an ordinary correction for the right eye, for the time being at least, contact glass to limit of tolerance for the left eye, and general gland therapy.

The second case demonstrated the successful use of the contact glass. Following a study of the literature, a brief review of the available theories of ætiology and methods of treatment of conical cornea was presented. Outstanding were the influences of heredity and in the individual the importance of endocrine disturbance. The victims of the eye condition were generally poorly nourished anæmic patients, usually females, with some of the following findings: nodular thyreoid gland, nervous disturbances, dry skin, flattened eye teeth, temporary loss of hair, increased sweating, disturbance of growth, and fragility of nails.

In well equipped institutions investigations were usually made along the lines of blood examination (increase of lymphocytes was common), basal metabolism investigation (the rate was generally lowered), and special tests for glandular disturbance. X ray examination of bones and some other tests in use, rather than being of any practical advantage, seemed more to prove the truth of a suggested theory, such as disturbance of calcium metabolism.

For treatment modern ideas seemed based on the lines of the contact glass, which probably had a favourable influence on the course of the disease. Use of a contact glass should be supplemented by good general management. Opinions seemed divided about glandular therapy, but excellent results had been obtained.

There was a passing of enthusiasm for operative methods, namely, cautery scarring of the cone, with or without deliberate perforation, and subsequent iridectomy and tattooing if necessary.

A general discussion followed on the fitting of contact glasses and the slit lamp findings in conical cornea.

Homonymous Hemianopia.

Dr. W. J. L. Duncan presented a married woman, aged thirty-eight years, with a left homonymous hemianopia passing through the fixation point. The Wassermann test gave no reaction. Her past history recorded several miscarriages and the death of one child. Twelve months previously, during the course of a right basal pneumonia, there was, with unconsciousness, the sudden onset of a left hemiplegia, a left hemianæsthesia, and a left homonymous hemianopia. The patient was told by her doctor that at the time she had a very dilated heart and the condition was considered to be embolic in origin. Apart from the hemianopia, her other symptoms had almost completely cleared.

Retinal Disinsertion.

Dr. Duncan's second patient was a man, aged thirty-two years, with a retinal disinsertion in the left eye following a blow some four months previously, and successfully treated by Gonin's method.

Doyne's Platyscopic Spectacle.

Dr. Duncan demonstrated the use of Doyne's platyscopic spectacle (made by Theodore Hamblin and Company) in enabling patients whose vision was so defective that ordinary glasses were useless, to read ordinary print. It consisted of two plano-convex lenses in juxtaposition, each of twenty diopters, giving a focal length of one inch.

Vote of Thanks.

A hearty vote of thanks was passed to the retiring President and Secretary for their services to the Section during the past year.

NOMINATIONS AND ELECTIONS.

The undermentioned has been nominated for election as a member of the New South Wales Branch of the British Medical Association:

King, Callaghan John McCarthy, M.B., Ch.M., 1923 (Univ. Sydney), c.o. Dr. W. H. Cook, Young.
McKinnon, Malcolm Charles, M.B., B.S., 1929 (Univ. Sydney), Albion Park.
Macleod, Daniel, M.B., Ch.B., 1929 (Edinburgh), Lenakel, Tanna, New Hebrides.

Obituary.

WILTON WOOD RUSSELL LOVE.

Dr. Wilton Wood Russell Love, whose death occurred at Brisbane on January 3, 1933, was born at Hollymount, Ireland, in 1861. His father, sometime rector of Holy Trinity Church, Brisbane, came to Australia in 1862. Wilton Love was sent to the Brisbane Boys' Grammar School, where he distinguished himself. First of all he gained the silver medal of the upper school. He won a

trustees' extension scholarship, and in 1878 was awarded the Bowen Prize. In the following year he gained the gold medal of the school, the Lilley Medal, the Sydney University Prize, the John West Medal at the Senior Public Examination of the University of Sydney and the Queensland Exhibition, which entitled him to go to the University of Edinburgh. Here he became a medical student and continued his scholastic successes. In 1880 he won the Thomson Bursary and in 1883 was awarded a medal for *materia medica*. He graduated as Bachelor of Medicine and Master of Surgery in 1884. After serving for a period as house surgeon and house physician at the Royal Infirmary, Edinburgh, he came to Australia. He straightway commenced practice in Brisbane. His practice was a general one and he remained a general practitioner throughout his long and useful life.

Wilton Love held many positions of honour and trust. He was for some years Secretary of the Central Board of Health. He took an active part in the affairs of the Queensland Branch of the British Medical Association. He was President in 1907 and served on the Council on numerous occasions until he resigned in 1916. Prior to the formation of the Queensland Branch of the British Medical Association, he was President, for a period, of the Queensland Medical Society. He was Honorary Surgeon to the Hospital for Sick Children, Brisbane, to the Lady Bowen Hospital, and the Lady Lamington Hospital. In the early stages of his career he lectured in chemistry at the Brisbane Technical College and the Pharmacy College. He was a member of the Medical Board of Queensland and of the Senate of the University of Queensland. He took part in several Australasian Medical Congresses and acted as Honorary Secretary of the session held in Brisbane in 1920. He was a foundation Fellow of the Royal Australasian College of Surgeons.

Wilton Love was interested in matters non-medical. He was fond of sailing and gardening and was devoted to literature and natural history. He made a particular study of Australian birds. He retired from practice several years before his death.

Dr. J. Lockhart Gibson writes:

After a friendship of fifty years it is not easy to write of Wilton Love. I knew him first in Edinburgh. His personality has varied very little. He built his medicine on a sound general and classical culture. He was indeed an example, steadily becoming rarer, of one who could quote the classics aptly in the course of his literary efforts spoken or written. He had a mind well stored with general literature, with medical literature in all its branches, and with work in the allied sciences. His memory was a good one, and it was often possible, on account of his wide reading, to use him as a bibliography. Although he remained a practitioner of general medicine all his life, he made personal use of many of the special departments: X rays, diathermy, high frequency, pathology, chemistry. Years ago he did most of the pathological work in Brisbane, and at one time was Lecturer in Chemistry at the Brisbane Technical College. His work on the honorary staff of the Hospital for Sick Children and on the Lady Lamington Hospital for Gynæcology, was recognized to be good. No medical man in Brisbane established amongst his patients a greater record of service before self, nor was anyone held in more affectionate regard by all classes of them than Wilton Love. He was a man with whom it was possible to disagree and to continue to regard with real affection. As a companion he was enlightening and always entertaining. As a *raconteur* few equalled him. His connexion with Northern Ireland no doubt lent raciness to his stories. They were always enjoyable and often the same story suffered improvement as the months rolled on.

It was no doubt his powers as a *raconteur* as well as his medical qualities that caused the constant inquiries for Love from our southern colleagues after he ceased to be a member of the Federal Committee. When I succeeded him on that body I was not seldom envious of the friendly and affectionate references to him by the members of the Committee and by others, both in Melbourne and in Sydney. He served his profession well on the Queensland Medical Society, as Honorary Secretary for many years, and as a President; as President of the Queensland Branch of the British Medical Association; as member of many Australasian Medical Congresses; and as member of the Federal Committee. He served both his profession and the University on the Queensland University Senate, of which he was an original member. He did not seek after medical diplomas, beyond taking his M.B., C.M. (Edinburgh), but he became a foundation Fellow of the Royal Australasian College of Surgeons. He suffered an irreparable loss twelve years ago, when his wife, to whom he was very deeply devoted, died after a short, sharp illness. This loss caused him to retire somewhat into his shell and to feel less inclined to attach himself to public bodies and to join in public functions. He had only one son, but he proved his metal by enlisting for service overseas during the war. He was fortunate in regaining him, although wounded for a time. His two daughters are married to pastoralists and live, as a rule, far from Brisbane. To them and to his grandchildren he was greatly attached. A devoted sister kept house for him and he took much joy and interest in the beautiful home he and his wife had established at Bulimba. All of his colleagues learned to hold him in affectionate regard. We all envied and admired his erudition and the use he made of his scanty leisure.

THOMAS DUN BERTRAM.

We regret to announce the death of Dr. Thomas Dun Bertram, which occurred on March 13, 1933, at Epping, New South Wales.

JOHN FRANCIS CRAMP.

We regret to announce the death of Dr. John Francis Cramp, which occurred on March 13, 1933, at Woollahra, New South Wales.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A meeting of the University of Sydney was held on March 6, 1933.

A communication was received from the Assistant Secretary of the British Museum announcing a gift from the Trustees to the University of Sydney of a selection of antiquities from the excavations at Ur of the Chaldees in the season 1931-1932.

The Prime Minister of the Commonwealth advised that it had been decided to provide a sum of £1,250 *per annum* for a period of five years for the Department of Anthropology.

The following appointments were approved: Miss Ruby Payne-Scott and Mr. R. H. Healey as Demonstrators in Physics; Dr. W. G. K. Duncan as Assistant Director of Tutorial Classes; Mrs. E. M. Osborn, M.Sc., as Tutorial Class Lecturer in Biology; Dr. E. S. Morris as Examiner for the Diploma in Public Health; Dr. Howard Bullock as a member of the Cancer Treatment Subcommittee at Sydney Hospital.

Correspondence.

ABNORMALITIES OF THE FEMALE GENITAL TRACT.

Sir: I submit for publication the following brief notes on two cases of congenital malformation of the female genital tract.

I was consulted recently by an attractive young married woman, twenty-four years of age, who had been married six months and wished to know whether she could have children. She told me she had never menstruated nor felt any periodic molimina. Apart from this fact her health had always been good and she had never been seriously ill.

On examination she proved to be a well built girl with a good complexion, but rather a dry skin. The breasts were fairly well developed, nipples small, no axillary hair, and the pubic hair fine and scanty. The external genitalia were small and poorly developed, the *labia majora* and *mons veneris* lacking the usual deposit of fat. The vaginal orifice was normal and easily admitted two fingers. The vagina was a blind sac, 6·25 centimetres (two and a half inches) in depth, the cervix was absent, and speculum examination did not reveal even a rudimentary cervical canal. On bimanual examination no uterus or appendages were palpable. Coitus was satisfactorily performed, but the patient derived no pleasure from it nor felt any desire.

The sister of the above patient was examined a few days later. She was aged twenty-six years, had been married three years and had never menstruated. On examination her anatomical condition was found to be identical with that of her sister, except that on rectal examination what appeared to be a rudimentary uterus was palpable in the mid-line, above and behind the vagina.

The mother of these girls had not menstruated until the age of twenty. She had four children in all: two sons, aged thirty-two and twenty-eight years, and then the two girls whose history I am recounting. One of the sons is married and has a child.

This developmental abnormality is not very uncommon, but I have never heard of its occurring in two members of an otherwise normal family. It is of interest to note that both sisters are anxious to have children.

Yours, etc.,

M. Elliot Smith, M.B., Ch.M. (Sydney), F.R.C.S. (Edinburgh), *Honorary Obstetrician, Lady Bowen Hospital, Brisbane.*

97, Wickham Terrace,
Brisbane,
February 20, 1933.

PSYCHOANALYSIS.

Sir: In the review of a book entitled "An Introduction to Analytical Psychotherapy" which appeared in the issue of the The Medical Journal of Australia dated February 18, 1933, the statement was made that the author, Dr. Ross, "does not believe in a psychoanalysis of self as a prelude to work as a psychiatrist".

Apart from the fact that, if Dr. Ross had been psychoanalysed, this would have made him a better psychiatrist, such an experience would have enabled him to realize that Malinowski's observations among the Trobriand Islanders confirm Freud's work on the Œdipus complex and do not constitute a rebuttal thereof as is stated to be the case.

It is true that Malinowski has written a book called "Sex and Repression" in which he has attempted to refute Freud's discoveries, but to anyone whose vision has been widened through being made aware of unconscious mental processes it is obvious that he has not succeeded in his object.

A later book, entitled "The Sexual Life of Savages", in which Malinowski has set down what he actually observed without attempting to emphasize part of the material as he did in the earlier volume, supplies definite evidence which in reality supports Freud.

The fact is that many of the social customs which are found among the Trobriand Islanders may be regarded as the symptoms of a sort of community psychoneurosis, a condition that, resulting as it does from repression of the Œdipus complex (and other unconscious impulses), is comparable with psychoneurosis when it occurs in an individual.

A special technique is required to bring to light these repressed impulses which, unless the observer is an individual of the calibre of such as Pasteur, is well nigh impossible to acquire without a personal psychoanalysis. Even a worker of the capacity of Freud himself would attain proficiency in this technique much more quickly if he availed himself of the opportunity to obtain enlightenment through efficient psychoanalysis.

It is because Malinowski has not availed himself of this opportunity that he supplies evidence in support of Freud's discoveries without recognizing that he is doing so, and in addition actually distorts it because he unconsciously wishes to prove the opposite.

Yours, etc.,

R. Coupland Winn.

143, Macquarie Street,
Sydney,
February 20, 1933.

TRIGEMINAL NEURALGIA.

Sir: Is it any wonder that our patients sometimes patronize Chinese herbalists, bone setters, Christian Scientists *et cetera*? Listen to this: I suffered for many years from periodical attacks of supraorbital neuralgia of a very severe type. These attacks usually lasted about three or four months and then disappeared to recur in about two years' time. I always lived in dread of them and thinking that division of the posterior root of the Gasserian ganglion was a certain method of cure, I decided to have this done nearly three years ago. Result no good.

so a week later, in again, and a few fibres which had apparently been overlooked the first time divided. Result worse, so a month later, in again; ganglion injected with alcohol and avulsed. Result still bad. From having suffered periodically for periods of three months, I was now without one waking moment free from pain. After about six months, in again, and fifth nerve separated from pons. Result worse than awful. So after about a month, injection of four or five cubic centimetres of alcohol through *foramen ovale*. If possible, this made things worse still. That is over eighteen months ago and during that time I haven't had one waking moment free from pain, added to which are sensations as if my face is being roasted, swelling up, and as if thousands of insects are running a marathon over it. I have forgotten to mention that before the operations the pain was supraorbital, but now the whole of the distribution of the fifth nerve is involved; also the fact that I had one and a half inches of supraorbital nerve removed from my orbit eight years ago.

After leaving hospital after my last series of operations I was lying in bed and was attacked by a very severe pain in the right deltoid region. This turned out to be a brachial neuritis and was followed by a similar attack in the other arm, so that for over twelve months I wasn't able to wash, dress or feed myself. Of course, it helped to be told that it was the circumflex and musculo-spiral nerves that were affected. I was tested in many ways and informed that I must have a "septic focus" (splendid words). I've been tested in many ways, but the "focus" is still undiscovered. I've been treated with drugs, ionization, diathermy, infra-red rays; I've had all my teeth removed, but the neuritis is still present, though to a lesser degree. Does anybody know of a decent Chinese herbalist, bone setter or Christian Scientist? If so, I'd like to hear of them, though I promise not to employ them, as, not having worked for two years, I wouldn't be able to pay them. I have tried nearly all the known analgesics to relieve this pain in the head and face, but none of them, in my case, has been of much use with the exception of morphia, of which I have had very very few doses (I'm afraid of it).

Yours, etc.,
A. LYONS, M.R.C.P. (Edinburgh).

Eaglehawk,
Victoria,
February 28, 1933.

THE NEW SOUTH WALES MEDICAL BOARD.

SIR: My attention has been drawn to a letter published in your journal of February 25, relating to the appointment of the Medical Board, wherein it is stated that the new members accepted their posts without taking the trouble to investigate the circumstances.

I have no brief for the new members, as they are quite capable of defending any innuendoes of this character. I merely wish to state from my own knowledge that many of the new Board, before accepting the offer, interrogated me very closely as to the conditions and I pointed out to them that whether they accepted the position or not I intended to abolish the old Board and appoint a new one immediately.

As you can well imagine, I did not come to this conclusion merely from caprice or whim or fancy. I acted because of the great number of representations made to me by members of the British Medical Association pointing out that the Board, as constituted, had outlived its usefulness.

Incidentally, I might mention that not one of these representations came from any of the members of the present Board.

I might furthermore point out that it was not the business of any of those who were offered a position on the Board to question the intentions of the Government. That was entirely a matter for our responsibility which I personally accept.

It is regrettable that medical men who are prepared to serve the community in the splendid manner which has already characterized the actions of the present Board are not given credit in accepting the offer of the Government, and it is also noticeable that your journal has not even commended the appointment of seven of the best men we have in the medical profession in New South Wales.

Yours, etc.,
R. W. D. WEAVER,
Minister for Public Works and Health.

Sydney,
March 2, 1933.

THE CLOSED DOOR.

SIR: Perusal of the Sydney University Calendar (1932) shows that the honorary surgical staff of the three teaching hospitals (Prince Alfred 47, Sydney 42, and Saint Vincent's 38) totals 127. Of these only 26 have "higher surgical qualifications", as defined by the Royal Australasian College of Surgeons. Prince Alfred and Saint Vincent's each have eleven and Sydney four.

Today the remaining 101 would not be eligible for election to the fellowship of the Australasian College.

The qualifications of several of the twenty-six were obtained largely by reason of post-war facilities, while others are graduates from abroad who obtained their "higher qualifications" before coming to this country. Those who travelled abroad for the especial purpose of sitting for further examinations were only a handful.

Less prosperous times will probably curtail the number of graduates going abroad for extended periods still more, and the local M.S. is no inexpensive bauble if, as Professor Dew says, about six years of intensive post-graduate study are necessary for its attainment.

It seems to me that if the College persists in viewing the possession of a "higher qualification" as essential to surgical worth, time and the Grim Reaper will thin its ranks and make it so exclusive that its usefulness will be lost. It seems a pity that a college with such laudable objects before it should hobble itself in the first flush of its existence.

The Royal College of England has a population of millions from which to recruit its strength; the Australasian College has not this same field to insure it being sufficiently strong to be influential, yet its portals are even more closely guarded than those of the English College. The mere fact of being an F.R.C.S. (Eng.) is no guarantee of admission, and as for the F.R.C.S. (Edin.) which does not seem easy of attainment, judging by the small percentage of recent passes, it ranks little higher than the Ch.M. (Syd.)

The County is often more exclusive than the Court.

Yours, etc.,
HIGH PRIEST.

Queensland.
Undated.

Post-Graduate Work.

POST-GRADUATE COURSE IN SYDNEY.

A POST-GRADUATE course will be held in Sydney from May 29 to June 10, 1933. The course has been designed particularly for general practitioners, but also so that during the afternoons those wishing to attend any particular branch of medicine or surgery shall be able to devote the whole of their afternoons to such study. Instruction will be given at the following hospitals: Royal Prince Alfred Hospital, Sydney Hospital, Saint Vincent's Hospital, Royal Alexandra Hospital for Children, Royal Hospital for Women, Crown Street Women's Hospital, Lewisham Hospital, Royal North Shore Hospital of Sydney, Tresillian Mothercraft Training School, and the Coast Hospital. These hospitals will be open for attendance during the whole of the afternoons of the course.

A series of lectures will be given on certain evenings during the course by Professor W. A. Osborne, of

Melbourne. Details of these lectures will be published at a later date.

The course is open to all medical practitioners, and the fee will be £3 3s.; for Professor Osborne's lectures, £2 2s. Railway concession tickets are obtainable by those attending the course for themselves, their wives, sons under sixteen, and daughters under fourteen years of age. Those wishing to attend should notify the Honorary Secretary, 225, Macquarie Street, as soon as possible.

Books Received.

CHURCHILL'S EMPIRE SERIES: THE BIOCHEMISTRY OF MEDICINE, by A. T. Cameron, M.A., D.Sc., F.I.C., F.R.S.C., and C. R. Gilmour, M.D., C.M., F.R.C.P. (C.); 1933. London: J. and A. Churchill. Demy 8vo., pp. 513, with illustrations. Price: 21s. net.

THE ORGANS OF INTERNAL SECRETION: THEIR DISEASES AND THERAPEUTIC APPLICATION, WITH A CHAPTER ON OBESITY AND ITS TREATMENT, by I. G. Cobb, M.D., M.R.C.S.; Fourth Edition; 1933. London: Baillière, Tindall and Cox. Demy 8vo., pp. 316. Price: 10s. 6d. net.

DISEASES OF THE SKIN: A MANUAL FOR STUDENTS AND PRACTITIONERS, by the late R. W. MacKenna, M.A., M.D., B.Ch.; Third Edition, revised and enlarged by R. M. B. MacKenna, M.A., M.D., B.Ch., M.R.C.P., M.R.C.S.; 1933. London: Baillière, Tindall and Cox. Royal 8vo., pp. 520, with 45 coloured plates and 149 illustrations. Price: 25s. net.

BAILEY'S TEXT-BOOK OF HISTOLOGY, revised and rewritten by A. Elwyn, A.M., and O. S. Strong, A.M., Ph.D.; Eighth Edition; 1932. London: Baillière, Tindall and Cox. Royal 8vo., pp. 762, with 529 illustrations. Price: 31s. 6d. net.

FOREWORD TO MARRIAGE, by R. V. Storer, M.R.C.S., L.R.C.P.; 1933. Melbourne: James Little and Son. Crown 8vo., pp. 69. Price: 4s. 6d. net.

Diary for the Month.

MAR. 21.—New South Wales Branch, B.M.A.: Medical Politics Committee.
MAR. 22.—Victorian Branch, B.M.A.: Council.
MAR. 24.—Queensland Branch (B.M.A.): Council.
MAR. 28.—New South Wales Branch, B.M.A.: Council (quarterly).
MAR. 30.—South Australian Branch, B.M.A.: Branch.
MAR. 30.—New South Wales Branch, B.M.A.: Annual Meeting.
MAR. 30.—New South Wales Branch, B.M.A.: Annual Meeting.
APR. 3.—New South Wales Branch, B.M.A.: Organization and Science Committee.
APR. 4.—New South Wales Branch, B.M.A.: Council.
APR. 5.—Victorian Branch, B.M.A.: Branch.
APR. 5.—Western Australian Branch, B.M.A.: Council.
APR. 6.—South Australian Branch, B.M.A.: Council.
APR. 7.—Queensland Branch, B.M.A.: Branch.
APR. 11.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
APR. 18.—New South Wales Branch, B.M.A.: Ethics Committee.
APR. 19.—Western Australian Branch, B.M.A.: Branch.
APR. 20.—New South Wales Branch, B.M.A.: Clinical Meeting.
APR. 21.—Queensland Branch, B.M.A.: Council.
APR. 27.—South Australian Branch, B.M.A.: Branch.
APR. 27.—New South Wales Branch, B.M.A.: Branch.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser", pages xiii, xv.

ADELAIDE CHILDREN'S HOSPITAL (INCORPORATED), ADELAIDE, SOUTH AUSTRALIA: Honorary Officers.

HOBART PUBLIC HOSPITAL, HOBART, TASMANIA: Junior Resident Medical Officer.

MATER MISERICORDIÆ CHILDREN'S HOSPITAL, BRISBANE, QUEENSLAND: House Physician, House Surgeon.

QUEEN VICTORIA MEMORIAL HOSPITAL, MELBOURNE, VICTORIA: Resident Medical Officer (female).

SAINT VINCENT'S HOSPITAL, MELBOURNE, VICTORIA: Medical Officers.

THE BRISBANE AND SOUTH COAST HOSPITALS BOARD, QUEENSLAND: Honorary Officers.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane Associated Friendly Societies' Medical Institute. Toowoomba Associated Friendly Societies' Medical Institute. Chilliagoe Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL are advised, in their own interests, to submit a copy of their agreement to the Council before signing. Lower Burdekin District Hospital, Ayr.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	Combined Friendly Societies, Clarendon and Kangarilla districts. All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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